Computer
Assisted
Telephone
Interviewing
Technical
Reference
Group

Population Health Monitoring and Surveillance:

Question Development Field Testing

Field Test 3 Report

Cancer – Sun Protection,
Injury and Injury Prevention,
Musculo-skeletal Disorders,
Nutrition & Physical Activity

July 2004

CATI Technical Reference Group

National Public Health Partnership

Computer Assisted Telephone Interviewing (CATI) is a methodology widely used for surveillance of health behaviours and health outcomes in populations in Australia. The National CATI Health Survey Technical Reference Group (CATI TRG) is an advisory committee to the National Public Health Information Working Group under the National Public Health Partnership. Members of the CATI TRG include representatives from State/Territory Health Departments, the Australian Government Department of Health and Ageing (DoHA), the Australian Bureau of Statistics, the Australian Institute of Health and Welfare and the Public Health Information Development Unit at the University of Adelaide. Since its inception in 1999, the CATI TRG has been a forum for the development and promotion of national standards, valid methods and capacity for CATI health surveys and health surveillance.

To embark in the efforts towards 'harmonisation' of CATI health surveys in Australia, the CATI TRG has identified the need to develop question modules for behavioural risk factor and chronic disease topics based on well-developed conceptual frameworks that underpin the data requirements for health surveillance. The proposed question modules are set to undergo a rigorous process of cognitive and field-testing under the guidance of the CATI TRG and the results will be published in a question module manual as a key reference to those interested in CATI health surveys in Australia.

This paper provides a report on the third field test that was undertaken by the Health Survey Program Branch, Centre for Epidemiology and Research, NSW Department of Health for the Australian Bureau of Statistics with funding from DoHA.

Any comments or information relevant to the subject matter of this paper should be directed to:

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SUMMARY

Summary comments have been made on each set of questions taking into account three factors:

- the test–retest reliability of the question with an estimated reliability of 0.8 to 1.0 being excellent, 0.6 to 0.79 good, 0.4 to 0.59 fair, or <0.4 poor;
- limitations on interpretation of the results for each question;
- comments from interviewers.

A question is acceptable if the estimated reliability and its 95% Confidence Interval (CI) is 0.6 or greater (excellent or good), and there are no issues with the question requiring further development.

Musculoskeletal disorders

Calcium intake

- The test–retest reliability of the *cups of milk per day* question is good. However, consumption may be underestimated due to being asked to quantify consumption in cups, and respondents may not include milk that is consumed when eating other foods such as breakfast cereal.
- The test–retest reliability of the *serves of yoghurt per day* question is excellent.
- The test–retest reliability of the *serves of custard per day* question is fair. Only 15 per cent of respondents ate custard, and almost all ate less than one serve per day, so need to examine how much custard contributes to daily calcium intake.
- The test–retest reliability of the *serves of cheese per day* question is good.
- The test–retest reliability of the *consumption of the recommended daily calcium intake indicator* is fair.

Prevalence of musculoskeletal disease
- The test–retest reliability of the *ever diagnosed with arthritis* question is excellent.
- The test–retest reliability of the *ever diagnosed with osteoporosis* question is good.
- There still appears to be confusion between what constitutes arthritis, and the difference between arthritis and osteoporosis, despite inclusion of a brief definition of each for the interviewer to read if asked.

Nutrition

Type of milk
- The test–retest reliability of the *type of milk usually have* and the *type of milk usually consumed* questions are both good and the convergent validity is excellent. Therefore, there is no difference between the questions in terms of test–retest reliability and validity and either question can be used.

Vegetables
- The test–retest reliability of the *serves of vegetables consumed* question is fair. There is still a lot of confusion around the concept of serves, and the difference in serve sizes between cooked vegetables and salad only confuses respondents more.
- The test–retest reliability of the adequate vegetable intake indicator is poor.
- Just under 70 per cent of people included potatoes in their answer, and of those who include them, over 43 per cent included roasted, baked or fried potatoes. Therefore, to improve the estimate of vegetable intake it may be necessary to include instructions about the specific types of potatoes to include in the response.

Fruit
- The test–retest reliability of the *serves of fruit consumed* question is good.
- The test–retest reliability of the *adequate fruit intake indicator* is good.
- A small number (3.6 per cent) included fruit juice without pulp in their report of fruit intake. To increase the accuracy of reported fruit intake it may be necessary to state what type of fruit or juice should be included.

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Cancer: Sun protection

- The test–retest reliability of the *avoidance of sun between 11.00 a.m. and 4.00 p.m. in the last 4 weeks* question is fair. Despite clearly defining the time period in the question, people were still confused when asking the question in winter. Confusion also arose from differentiating between deliberate avoidance and consequential avoidance such as being indoors at work.
- The test–retest reliability of the *wearing of sunglasses in the last 4 weeks* question is good.
- The test–retest reliability of the *wearing of a hat or cap in the last 4 weeks* question is good. However, further clarification of the type of cap to include is needed.
- The test–retest reliability of the *wore sun protective clothing in last 4 weeks* question is fair. People were unsure what constituted 'protective clothing'.
- The test–retest reliability of the *use of sunscreen in the last 4 weeks* question is good. However, people were unsure about whether to include cosmetics that contain sunscreen.

Injury and injury prevention

Smoke detectors
- The test–retest reliability of the *smoke detectors in the home* question is excellent.
- The test–retest reliability of the *type of smoke detectors in the home* question is excellent. However, many people did not know the type of smoke detector that they had, or stated they had both types.
- The test–retest reliability of the *last time smoke detectors tested* question is fair. It appeared that people tested their smoke detectors between tests. A

reduction of categories that reflect the recommended testing regime would improve the test–retest reliability.

First aid kit
- The test–retest reliability of the *have a first aid kit* question is good.
- The test–retest reliability of the *have first aid supplies in the home* question is fair. As only the people who answered no to the question *have a first aid kit* answered this question the sample was small, with a larger sample the question would probably be good*.*
- As approximately 30 per cent of people had first aid supplies in the home but did not have a first aid kit there is a need to consider combining these two questions.

Falls in the elderly
- The test–retest reliability of the *fall in the last 12 months* question is good.
- The test–retest reliability of the *number of accidental falls in the last 12 months* question is fair.
- The test–retest reliability of the *accidental fall requiring medical attention in last 12 months* question is good.
- The test–retest reliability of the *admission to hospital for most recent fall question* is fair.
- The test–retest reliability of the *any exercise currently* and the *any exercise usually* questions are fair. The sample size for these two questions was too small to make an accurate assessment of the convergent validity, as demonstrated by the wide confidence intervals. The test–retest reliability of reporting of the type of exercise undertaken was fair. However, sample size restrictions mean that an accurate assessment of the reliability of the components of this multi-response question could not be undertaken.

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- The test–retest reliability of the *reason for not exercising* question is poor. Sample size restrictions mean that an accurate assessment of the reliability could not be made. The question should be asked in the same tense as the other questions to limit confusion.
- Need to consider re-testing all exercise questions in a larger population of people aged 65 years and over.

Physical activity

- Agreement between the physical activity question how active are you and the Active Australia questions was poor.
- The proportion of people who report that they are Very Active or Active (84 per cent) is considerably different to the proportion of people that do 'adequate' physical activity as defined by the *Active Australia Survey* questions (49 per cent).
- Approximately 60 per cent of respondents were consistently classified as either adequate–active or inadequate–not active by the two indicators.

INTRODUCTION

In 2000, the National Public Health Information Working Group (NPHIWG) initiated a program to develop a nationwide population and behavioural risk factor surveillance system.[1] This initiative is designed to identify and progress methodological and technical issues surrounding population health surveillance systems, and develop a series of modules that can be used in a nationwide surveillance system.

Under an agreement with the Australian Government Department of Health and Ageing (DoHA), a collaboration was formed between the DoHA, the Computer Assisted Telephone Interview Technical Reference Group (CATI TRG)—a sub committee of NPHIWG—and the Australian Bureau of Statistics (ABS). Under this collaboration, a series of question modules have been developed in preparation for field-testing.

The ABS, on behalf of the CATI TRG, has contracted the NSW Department of Health to undertake field-testing of the cancer, injury, musculoskeletal disorders, physical activity, and nutrition question modules for inclusion in nationwide preventable chronic disease and behavioural risk factor health surveys. This is the third in a series of field-testing surveys undertaken to test questions used by CATI systems. The focus of this round of field-testing was predominantly test–retest reliability of the questions, with some convergent validity.

METHODS

Survey objectives

This study was undertaken to field test five modules of questions for inclusion in a preventable chronic disease and behavioural risk factor health survey module manual for use in nationwide CATI health surveys. The modules tested were musculoskeletal disorders, nutrition, cancer, physical

activity, and injury. The field-testing was performed using CATI technology and concentrated principally on question test–retest reliability and convergent validity.

Survey instrument

The question modules were developed from questions that had been used in CATI health surveys around Australia, and were recommended for testing by the CATI TRG. Prior to field-testing, the ABS undertook cognitive pre-testing of the question modules[2]. The final modules submitted for field-testing were compiled following the recommendations from cognitive pre-testing. The questionnaire (available in Appendix 1) was structured as follows:

- Introduction
- Key demographics such as age and sex
- Musculoskeletal disorders including calcium intake, arthritis and osteoporosis (6 questions)
- Nutrition (6 questions)
- Cancer: sun protection (5 questions)
- Injury questions including smoke alarms, first aid in the home and falls in the elderly (14 questions)
- Additional demographic and associated questions.

The physical activity module, which comprised of one question 'How active are you'? was tested in the second quarter of 2004 in the NSW Population Health Survey in order to obtain sufficient numbers to compare it with the *Active Australia* [3] questions that are incorporated into that survey.

Survey sample

The target sample was persons living in NSW aged 16 years and over stratified by geographical region. As the age–sex profile of NSW closely reflects that of Australia (Figure 1) it was appropriate to sample residents of NSW to represent Australia. The stratification by geographical region ensures that approximately 50 per cent were selected from urban and rural areas.

Figure 1: Comparison of NSW and Australian age distribution

Source:NSW Health Survey 2002 (HOIST). Centre for Epidemiology and Research, NSW Department of Health.

The sampling frame was developed as follows. Records from the Australia on Disk electronic White Pages were geo-coded using MapInfo mapping software. The geo-coded telephone numbers were assigned to statistical local areas and area health services. The proportion of numbers for each telephone prefix by area health service was calculated. All prefixes were expanded with suffixes ranging from 0000 to 9999. The resulting list was then matched back to the electronic phone book. All numbers that matched numbers in the electronic phone book were flagged and the number was assigned to the relevant geo-coded area health service. Unlisted numbers were assigned to the area health service containing the greatest proportion of numbers with that prefix. Numbers were then filtered to eliminate contiguous unused blocks of greater than 10 numbers. The remaining numbers were then checked against the business numbers in the electronic phone book to eliminate business numbers. Finally, numbers were randomly sorted.

When households were contacted, one person was selected, using random numbers generated by the CATI system. During the survey a total of 6560 telephone numbers were called (Table 1). Only 1909 (29.0 per cent) of these numbers yielded an eligible household. The remaining numbers were not answered (despite seven call backs) or were disconnected; or were business, fax, or interstate numbers.

Table 1: Call Outcome Results

Result	Value	Per cent
No Answer	3808	58.0
Business telephone number or fax number	829	12.6
Household not in NSW or was holiday house	14	0.2
Selected respondent away for duration of survey	94	1.4
Selected respondent mentally confused or deaf	94	1.4
Selected respondent spoke other language	41	0.6
Refusal to participate	374	5.7
Completed first but not second interview	226	3.4
Agreed to second interview but not contactable within the two week retest period	32	0.5
Refused to do second interview	200	3.0
Complete interview	848	12.9
Total telephone numbers called	6560	100.0

In total 848 interviews were conducted, with 403 interviews conducted in urban areas and 437 interviews conducted in rural areas. The overall response rate was 51.5 per cent. There were three points at which people could refuse to participate in the survey: either prior to doing the survey, at the end of time one (test); and at the beginning of time two (retest).

Interviews and interviewer debriefs

The CATI field-testing pilot was conducted between 30 March and 1 April 2004 on a sample of 21 NSW residents aged 16 years and over using CATI technology. Two experienced NSW Health Survey Program interviewers conducted the interviews. The pilot served to test the questionnaire and identify any outstanding issues with particular questions. Following this, an interviewer debrief was held with staff from the NSW Health Survey Program and from the Australian Bureau of Statistics. Issues raised by the interviewers and supervisors are summarised in Table 2. Full interviewer comments are given in Appendix 2. Adjustments and amendments were made to some of the questions as appropriate and were incorporated into the final version of the questionnaire for field-testing (Table 2).

Field-testing was undertaken in May and June 2004. Trained interviewers at the NSW Health Survey Program CATI facility conducted the interviews. Up to seven calls were made to establish initial contact with a household, and five calls were made in order to contact a selected respondent. Following the field-testing survey, the final interviewer debrief was held with staff from the NSW Health Survey Program, the Australian Bureau of Statistics, and the Population Health Information Development Unit of the Australian Institute of Health and Welfare. Issues raised by the interviewers and supervisors are summarised in Table 2. Full interviewer comments are given in Appendix 3.

Table 2: Field-testing questionnaire debriefing issues and modifications

Proposed question for pilot testing	Pilot study debrief Issue	Recommended change post pilot	Question field tested	Field test survey debrief Issue
Musculo skeletal disorders: calcium intake				
How many cups of milk do you usually drink in a day? Please include soya milk.	If people answer that they 'do not drink milk' then they should skip the question in the nutrition module '*What type of milk do you usually have?*' People who do not drink milk to skip '*What type of milk do you usually have?*' and have 'Don't have milk' automatically assigned.		How many cups of milk do you usually drink in a day or a week? Please include soya milk.	'drink' should be 'consume' or 'have'; People may not consider 'drinking milk', when they 'eat' breakfast cereal, or they may not include milk in tea and coffee. Expand response options to include a definition of 'whole milk' as a lot of people said 'regular' 'fat' or 'normal' milk.
How many serves of yoghurt do you usually have in a day? One serve is a 200 gm tub of yoghurt.	See below	See below	How many serves of yoghurt do you usually have in a day or a week? One serve is a 200 gm tub of yoghurt.	To minimise confusion give an example of what 200 gm of yoghurt is e.g. 'tub in 2 or 6 pack'.
How many serves of custard do you usually have in a day? One serve is one 250 ml cup of custard.	See below	See below	How many serves of custard do you usually have in a day or a week? One serve is one 250 ml cup of custard.	Add an extra response code to allow for occasionally, or once a week.
How many serves of cheese do you usually have in a day? One serve is 2 cheese slices or about 40g.	See below	See below	How many serves of cheese do you usually have in a day or a week? One serve is 2 cheese slices or about 40g.	Add an extra response code to allow for occasionally, or once a week. Describing 40g as '2 cheese slices' is useful and helps obtain a clearer response.
All questions in module.	The questions on serves of dairy had a slight 'forcing' effect—by emphasising 'per day' people were rounding up to too high a figure.	Change questions to read '…in a day or a week?' Program questions in CATI system so that 'half serves' can be entered. If people have less than one cup of milk per week or less than one serve of custard, cheese or yoghurt, code as 'do not drink milk' or 'do not eat custard–yoghurt–cheese'.	All questions in module.	Including '…or a week' causes confusion as people are unsure whether to reply with serves per day or week.
Nutrition—fruit and vegetables				
What type of milk do you usually have? Please include soya milk. (Interviewer: Prompt for fat intake if not provided.)	None	None	What type of milk do you usually have? Please include soya milk. (Interviewer: Prompt for fat intake if not provided.)	Response options should be expanded to include a definition of 'whole milk' as a lot of people said 'regular', 'fat' or 'normal' milk.
What type of milk do you usually consume? Please include soya milk. (Prompt for fat intake if not provided.)	None	None	What type of milk do you usually consume? Please include soya milk. (Prompt for fat intake if not provided.)	

Proposed question for pilot testing	Pilot study debrief Issue	Recommended change post pilot	Question field tested	Field test survey debrief Issue
How many serves of vegetables do you usually eat each day? A serve of vegetables is half a cup of cooked vegetables or 1 cup of salad.	None	None	How many serves of vegetables do you usually eat each day or week? A serve of vegetables is half a cup of cooked vegetables or 1 cup of salad.	The wording of 'a serve' still needs more clarification by the interviewer. Respondents often respond by equating one serve with one meal. An explanation of the sort of cup that is referred to would be useful e.g. a tea cup, a household cup etc. Respondents find it difficult to answer the question accurately, because it is difficult to combine mixed measurements in your head. To make quantification easier the question could be separated into two i.e. cooked and salad. As to cooked vegetables, ask how many cups, and then serves should be calculated or code afterward.
What vegetables did you include?	Question is terse and reference is unclear Respondents tended to rattle off their usual vegetables and it is difficult to get them all down—either using the list or typing in 'other'. In essence, the major vegetable of interest here is potatoes, and whether people include them in their calculation of serves of vegetables. Also the method of cooking of potatoes is important—boiled versus fried.	Change question to the following: When you answered the last question, did you include potatoes? *Prompt for method of cooking* Yes—boiled Yes—roasted Yes–deep fried (chips, wedges, potato scallops) Yes—oven baked fries. Did not include potatoes in previous question.	When you answered the last question, did you include potatoes? *Prompt for method of cooking*	'Steamed' should be added to 'boiled/mashed' as many respondents referred to potatoes 'steamed' in a microwave. A clear definition of how to code other types of potato is needed e.g. au gratin with milk, raw potato, grated potato, and potato cakes. There was no category for 'don't eat potato'. This confusion would tend to exclude from the vegetable intake 'good' potatoes' where the respondent doesn't include potatoes in vegetable intake. Some respondents found the question confusing.
How many serves of fruit do you usually eat each day or week? A serve of fruit is 1 medium piece, 2 small pieces of fruit or 1 cup of diced fruit.	None	None	How many serves of fruit do you usually eat each day or week? A serve of fruit is 1 medium piece, 2 small pieces of fruit or 1 cup of diced fruit.	People who do not 'eat fruit' but drink fruit juice with pulp are not included.
Did you include fruit juice in your calculation?	Question is terse and reference is unclear.	*When you answered the last question, did you include fruit juice in your calculation?* Yes Yes—freshly squeezed (which includes fruit pulp) Don't drink fruit juice No, did not include fruit juice in calculation.	When you answered the last question, did you include fruit juice in your calculation?	People who do not 'eat fruit' but drink fruit juice with pulp are not included. Some respondents found this question confusing.

Proposed question for pilot testing	Pilot study debrief Issue	Recommended change post pilot	Question field tested	Field test survey debrief Issue
Musculoskeletal				
Have you ever been told by a doctor that you have arthritis?	Interviewers were asked by respondents to explain the difference between the two conditions. The interviewers need to be able to respond so that their credibility is maintained.	Add in an interviewer note with a short definition. '**Arthritis** is a disease of connective tissue. There are several different types of arthritis, but **Osteoarthritis** is one of the most common types. Osteoarthritis affects the cartilage in the joints. In osteoarthritis the cartilage that cushions the joints breaks down.	Have you ever been told by a doctor that you have arthritis?	There was uncertainty whether the question extended to people who previously had arthritis and no longer do, or who were mistakenly diagnosed in the past. Some said, 'I don't need the doctor to tell me, I had to tell the doctor'. Some respondents felt the question was patronising.
Have you ever been told by a doctor that you have osteoporosis?	Interviewers were asked by respondents to explain the difference between the two conditions. Interviewers need to be able to respond so that their credibility is maintained.	Add in an interviewer note with a short definition. '**Osteoporosis** is a disease where bone density and structural quality deteriorate, leading to weakness and bone fragility of the skeleton and increased risk of fracture (breaking bones). Common sites to fracture are the wrist, hip, spine, pelvis and upper arm'.	Have you ever been told by a doctor that you have osteoporosis?	Despite inclusion of a definition, there was some confusion between osteoporosis and osteoarthritis, which meant that at the question on osteoporosis sometimes interviewers had to go back to the definition of osteoarthritis.
Cancer: Sun protection				
In the last 4 weeks how often did you avoid being in the sun between 11.00 am. and 4.00 pm: would you say always, often, sometimes, rarely or never?	This question has the sense of a double negative, particularly when the correct answer is 'never'.	Change 'Never' to 'Not in the last 4 weeks' in the questions and in the code frame in line with recommendations from ABS cognitive testing.	In the last 4 weeks how often did you avoid being in the sun between 11.00 am. and 4.00 pm: would you say always, often, sometimes, rarely or not in the last 4 weeks?	Some people avoid being in the sun as a means of sun protection—others would like to be in the sun, but are not able due to work. How do you differentiate between intentional avoidance or enforced avoidance. An office worker might say 'I didn't avoid', but in effect did not to go into the sun because of work commitments. Response 5 (not in last 4 weeks) includes both people who never avoided being in the sun, and people who never avoided but were not in the sun anyway.

Proposed question for pilot testing	Pilot study debrief Issue	Recommended change post pilot	Question field tested	Field test survey debrief Issue
In the last 4 weeks how often did you wear sunglasses with uv (ultraviolet) protection when in the sun: would you say always, often, sometimes, rarely or never?	Respondents mentioned they have transition glasses that 'change' or 'adjust'.	Place an interviewer note into the question 'This includes transition glasses'.	In the last 4 weeks how often did you wear sunglasses with uv (ultra violet) protection when in the sun: would you say always, often, sometimes, rarely or not in the last 4 weeks?	'Ultra violet' should be spelt out —'Ultraviolet (uv), not the other way around. Is driving considered an activity in the sun or not? Some people were confused and thought the question referred to sunglasses and ultraviolet cream, not sunglasses with ultraviolet protection in the glass or lens. Interviewer notes are needed to advise whether polaroid glasses have ultraviolet protection. Some people use a parasol.
Not pilot tested	None	None	In the last 4 weeks, when you were out in the sun for more than 15 minutes, how often did you wear a broad brimmed hat or cap with a back flap? Would you say always, often, sometimes, rarely or not in the last 4 weeks?	Many respondents asked whether caps (without back flaps) should be included.
In the last 4 weeks how often did you wear protective clothing, including a hat, when in the sun: would you say always, often, sometimes, rarely or never?	It is unclear if a hat must be included to answer 'yes' to this question. If the answer is 'never a hat' but use other protection e.g. long sleeves, it is unclear how a respondent who uses some protective clothing all of the time is categorised.	There was reluctance to change the question to exclude a hat. The following additional question will be added in before this one: *In the last 4 weeks, when you were out in the sun for more than 15 minutes, how often did you wear a broad brimmed hat or cap with a back flap?*	In the last 4 weeks how often did you wear protective clothing, including a hat, when in the sun: would you say always, often, sometimes, rarely or not in the last 4 weeks?	A definition of protective clothing is needed—rash shirts, long sleeves etc. To get an accurate estimate of intention 'deliberately' could be added to the question '…deliberately wear protective clothing'. Some people included hats in this answer.
In the last 4 weeks how often did you use sunscreen: would you say always, often, sometimes, rarely or not in the last 4 weeks?	None	None	In the last 4 weeks how often did you use sunscreen: would you say always, often, sometimes, rarely or not in the last 4 weeks?	Some people said they put sunscreen on their face but not on the body—particularly women using makeup with a sunscreen. Does sunscreen in a cosmetic qualify for inclusion? The question could refer to 'all of your exposed skin'. Some people never use sunscreen because they are never in the sun. Some reference to renewal of sunscreen through the day at appropriate intervals may be warranted.

Proposed question for pilot testing	Pilot study debrief Issue	Recommended change post pilot	Question field tested	Field test survey debrief Issue
All questions in module.	None	None	All questions in module	The sun protection questions created issues when asked during 'winter', perhaps they should refer to 'last summer'. The introduction and some questions refer to a time frame of more than 15 minutes but not all questions are consistent. Answer 'often' should have been 'most of the time' to be consistent with other questions.
Safety practices in the home				
Do you have smoke detectors in your home?	It is unclear if respondents with smoke detectors that are hard wired need to perform testing.	Insert a question about the type of smoke detector: *What type of smoke detector do you have in your home?* Battery operated Wired into electrical system Don't know	Do you have smoke detectors in your home?	The question may be less confusing if asked as 'Do you have smoke *or fire* detectors in your home?' Use of the term 'smoke detectors' is a more common term than others such as 'fire alarm'.
Not pilot tested.	None	None	What type of smoke detector do you have in your home?	Some houses have both battery and wired smoke detectors. In the absence of the ability to insert both, Option 2 (wired into electrical system) was selected for such a response. This question is confusing to respondents. Many respondents were not sure what brand or type of detector they had. The question could be reworded to 'what power source is your smoke detector powered by?' or something similar. Several people mentioned that they tested the smoke detectors between the two interviews, which may have skewed the test–retest reliability of the response.
When was the last time you or someone else deliberately tested all of the smoke detectors in your home?	None	None	When was the last time you or someone else deliberately tested all of the smoke detectors in your home?	Some people tested their smoke alarm between test and retest, thus impacting on the reliability of this question.
Do you have a first aid kit?	People who answered 'yes' still got asked about first aid supplies in the home.	'Skip' to be programmed into question so that people answering 'yes' skip the next question: *'Do you have supplies of bandages, bandaids, antiseptic or other first aid equipment in your home?'*	Do you have a first aid kit?	None.

Proposed question for pilot testing	Pilot study debrief Issue	Recommended change post pilot	Question field tested	Field test survey debrief Issue
Do you have supplies of bandages, bandaids, antiseptic or other first aid equipment in your home?	None	None	Do you have supplies of bandages, bandaids, antiseptic or other first aid equipment in your home?	This could have been combined with 'Do you have a first aid kit?'
Injury: Falls in the elderly				
In the last 12 months, have you had a fall?	None.	None.	In the last 12 months, have you had a fall?	None.
How many times did you fall in the last 12 months?	None.	None.	How many times did you fall in the last 12 months?	None.
In the last 12 months have you had a fall that required medical treatment for injuries?	None.	None.	In the last 12 months have you had a fall that required medical treatment for injuries?	None.
Were you ADMITTED to hospital as a result of any of your falls in the last 12 months?	None.	None.	Were you ADMITTED to hospital as a result of any of your falls in the last 12 months?	None.
Do you currently undertake any form of exercise?	It is unclear what 'current' exercise refers to: referring to as of today, this week, e.g. someone may 'usually' exercise but can't 'currently' because of injury or similar.	Test two questions with 'usually' or 'currently' in them for convergent validity. *Do you **currently** undertake any form of exercise?* *Do you **usually** undertake any form of exercise?*	Do you currently undertake any form of exercise?	None.
Do you usually undertake any form of exercise?	Not pilot tested.	None.	Do you usually undertake any form of exercise?	None.
What type of exercise do you do?	None.	None.	What type of exercise do you do?	The list given was too short and did not include bowls and golf which are typical activities for this age group. Some very active people undertook activities such as jogging, football, hockey.

The questions on exercise work well—they are simple and specific and easily understood. However,, the exercise done by country people, people living and working on properties is not accounted for.

Need to consider carefully whether a read out or not, as some people don't think of some activities (e.g. dancing) as exercise.

An interviewer note to include–exclude gardening, lawn mowing etc. might be useful. |

Proposed question for pilot testing	Pilot study debrief Issue	Recommended change post pilot	Question field tested	Field test survey debrief Issue
How often do you do this exercise? Less than once a week One to two times a week Three to six days a week Daily	The code frame changes from 'times per week' to 'days per week'. If the respondent replies 4 times per week, at present the interviewer has to clarify whether that was on more than 3 days: one respondent answered that he–she at the weekend went on 4 walks over 2 days. Asking for number of times walking over the last week is preferable.	Change question code frame to the following: Number of times per day Number of times per week Less than once a week	How often do you do this exercise?	None.
What is the reason you did not participate in any exercise?	None.	None.	What is the reason you did not participate in any exercise?	There is a conflict of tense in this question yesterday, usually, last week etc. The question should be asked in the same tense as the original question e.g. 'what is the reason you do you not currently/usually participate in any exercise?'
All questions in module	ABS stated that the module is to be asked of people aged 75 years and over, but this means that the numbers of eligible respondents will be low.	To be asked of people aged 65 years and over.		

Study design

The field-testing concentrated primarily on test–retest reliability; However, there were two questions that required testing for convergent validity: type of milk, and quantity of exercise.

A single job containing the initial questionnaire, the repeat questionnaire and a call back prompt at the end of the initial questionnaire was programmed. When the questions were tested for test–retest reliability the same question was programmed for the initial questionnaire as well as the repeat questionnaire (A:A). If the questions were tested for convergent validity then either of the questions were programmed to be randomly presented in the initial questionnaire and the other question was presented in the repeat questionnaire, thus allowing for the crossover design (A:B; B:A). When questions were tested for both test–retest reliability and convergent validity either of the questions were programmed to be randomly presented in the initial questionnaire and either of the questions were programmed to be randomly presented in the repeat questionnaire, thus allowing for the crossover design as well as the test–retest reliability testing of each question (A:A, A:B, B:A, B:B).

Data analysis

Data manipulation and analysis was conducted using SAS v.8.02 statistical software package.[4]

Test–retest reliability was estimated by Cohen's kappa statistic for binary and nominal variables, and weighted kappa with Cicchetti-Allison weights for ordinal variables.[5] Unbalanced tables were corrected using the method described by Crewson.[6] Since erroneously low values of kappa can arise from skewed data,[7,8] percent agreement is also presented for categorical variables, calculated as the proportion of respondents in the same category at test and retest. Systematic bias between testing occasions was assessed using McNemar's test for binary variables and Bowker's test of symmetry for nominal variables. These tests are presented in Appendix 4. Where statistically significant bias was detected, Scott's kappa (or Bias Adjusted Kappa) was also calculated.[9] Test–retest reliability for continuous or count data was assessed using Spearman rank correlation coefficients (r_s) as a non-parametric analog of the intraclass correlation coefficient (ICC).[10] All variables for which r_s is reported were positively skewed. Systematic bias between testing occasions was assessed using Wilcoxon signed rank test (shown in Appendix 4). Test and retest data was also compared using a nonparametric approach described by Bland and Altman.[11] Plots of

differences versus mean values, with superimposed reference lines for the 5th percentile, median and 95th percentile are presented in Appendix 4. These plots indicate the values inside which 90 per cent of observations fall.

Convergent validity testing assessed whether prevalence differed when alternate forms of a question were used. Differences in prevalence were assessed using McNemar's test for binary variables and Bowker's test of symmetry for nominal variables. Kappa statistic and per cent agreement are also shown.

RESULTS

Estimates of test–retest reliability and convergent validity are shown in Tables 3 and 4, with the statistic used, the available sample for each question and the proportion of respondents that answered 'Don't Know' or 'Refused' at the first testing occasion. More detailed results are contained in Appendix 4. Frequencies at each test, a cross-tabulation for test and retest, and a test for bias between testing occasions, are shown for categorical variables. For continuous or count data, Appendix 4 shows summary statistics for each testing occasion, and for the difference (retest minus test). Plots of differences versus mean values are also shown, with superimposed reference lines for the 5th percentile, median and 95th percentile.

Test–retest reliability

Table 3: Test–retest reliability statistics for each question or indicator

Module Question	Sample	Statistic	Estimate	Lower 95 per cent CI	Upper 95 per cent CI	Per cent agree	Per cent don't know Time 1	Per cent refused Time 1
Musculoskeletal disorders								
Adequate calcium intake	823	Kappa	0.56	0.51	0.62	77.6	1.2	0.0
Cups of milk per day	844	r_s	0.71	0.66	0.75		0.1	0.0
Serves of yoghurt per day	836	r_s	0.86	0.83	0.89		0.6	0.0
Serves of custard per day	842	r_s	0.63	0.55	0.70		0.1	0.0
Serves of cheese per day	838	r_s	0.70	0.66	0.74		0.4	0.0
Ever told have arthritis	846	Kappa	0.87	0.83	0.90	94.6	0.1	0.0
Ever told have osteoporosis	842	Kappa	0.79	0.71	0.87	97.3	0.5	0.0
Nutrition								
Type of milk have	281	Kappa	0.83	0.78	0.89	89.3	0.0	0.0
Type of milk consumed	278	Kappa	0.83	0.78	0.89	88.8	0.2	0.0
Adequate vegetable intake	826	Kappa	0.42	0.35	0.49	77.2	1.4	0.1
Serves of vegetables per day	826	r_s	0.52	0.46	0.58		1.4	0.1
Adequate fruit intake	841	Kappa	0.68	0.62	0.73	83.6	0.4	0.1
Serves of fruit per day	841	r_s	0.77	0.74	0.81		0.4	0.1
Cancer: Sun protection								
Avoidance of sun between 11.00 a.m. and 4.00 p.m. in last 4 weeks	834	Weighted Kappa	0.45	0.40	0.50	49.4	0.6	0.2
How often wear sunglasses in last 4 weeks	841	Weighted Kappa	0.77	0.74	0.81	74.3	0.6	0.0
Hat wearing last summer	844	Weighted Kappa	0.73	0.70	0.77	71.1	0.2	0.0
Wear protective clothing in the sun	820	Weighted Kappa	0.54	0.49	0.58	55.6	1.4	0.0
Use of sunscreen in last 4 weeks	848	Weighted Kappa	0.71	0.67	0.75	71.0	0.0	0.0
Injury and injury prevention								
Smoke detectors in home	846	Kappa	0.93	0.90	0.96	97.5	0.0	0.0
Type of smoke detectors in home	521	Kappa	0.92	0.88	0.96	96.9	15.1	0.2
Last time smoke detectors tested	583	Weighted Kappa	0.63	0.57	0.68	66.7	6.6	0.0
Have a first aid kit	844	Kappa	0.76	0.71	0.81	89.6	0.5	0.0
First aid supplies in home	227	Kappa	0.74	0.56	0.92	96.9	0.0	0.0

Table 3: Test–retest reliability (*continued*)

Module Question	Sample	Statistic	Estimate	Lower 95 per cent CI	Upper 95 per cent CI	Per cent agree	Per cent don't know Time 1	Per cent refused Time 1
Fall in last 12 months	206	Kappa	0.80	0.71	0.90	92.2	0.5	0.0
Number of accidental falls in the last 12 months	47	Weighted Kappa	0.63	0.43	0.82	76.6	1.9	0.0
Fall which required medical attention in last 12 months	48	Kappa	0.78	0.61	0.96	89.6	0.0	0.0
Admitted to hospital for most recent fall	17	Kappa	0.76	0.46	1.00	88.2	0.0	0.0
Any exercise currently	76	Kappa	0.62	0.41	0.83	86.8	0.0	0.0
Any exercise usually	73	Kappa	0.63	0.42	0.84	86.3	0.0	0.0
Type of exercise : Walking	147	Kappa	0.61	0.46	0.75	84.4	0.0	0.0
Type of exercise : Exercises at home	147	Kappa	0.70	0.53	0.87	92.5	0.0	0.0
Type of exercise : Exercises in a group	147	Kappa	0.60	0.32	0.89	95.9	0.0	0.0
Type of exercise : Swimming	147	Kappa	0.76	0.50	1.00	98.0	0.0	0.0
Type of exercise : Dancing	147	Kappa	0.79	0.51	1.00	98.6	0.0	0.0

Test–retest reliability and/or convergent validity

Table 4: Test–retest reliability and convergent validity statistics

Question	Design	Sample	Statistic	Estimate	Lower 95 per cent CI	Upper 95 per cent CI	Per cent Agree	P(Bias)
Type of milk [have / have]	(A:A)	281	Kappa	0.83	0.78	0.89	89.3	
Type of milk [consumed / consumed]	(B:B)	278	Kappa	0.83	0.78	0.89	88.8	
Type of milk [have / consumed]	(A:B)	75	Kappa	0.84	0.74	0.94	89.3	1.0
Type of milk [consumed / have]	(B:A)	106	Kappa	0.86	0.77	0.94	90.6	1.0
Any exercise [currently / currently]	(A:A)	76	Kappa	0.62	0.41	0.83	86.8	
Any exercise [usually / usually]	(B:B)	73	Kappa	0.63	0.42	0.84	86.3	
Any exercise [currently / usually]	(A:B)	22	Kappa	0.46	-0.13	1.00	90.9	0.16
Any exercise [usually / currently]	(B:A)	36	Kappa	0.62	0.31	0.92	86.1	0.65
Active / very active / Adequate physical activity	(A:B)	2573	Kappa	0.19	0.17	0.22	59.0	<.0001

DISCUSSION

Musculoskeletal disorders

Calcium intake
An indicator of adequate calcium intake was calculated from respondents' reported intake of four sources of calcium: milk (including soya milk), yoghurt, custard, and cheese. One serve is equivalent to one cup of milk, 200 grams of yoghurt, one cup of custard, or 40 grams of cheese (approximately 2 slices). The recommended daily intake of calcium is 2–3 serves of milk, yoghurt or cheese or alternative each day for women, and 2–4 serves for men.[7] Adequate calcium intake is therefore defined as two or more serves per day from the total serves of all calcium sources. Around 78 per cent of respondents were classified the same at test and retest, and the kappa statistic was 0.56 (95 per cent CI 0.51–0.62).

The estimated test–retest reliability varied for the four calcium sources (cups of milk per day, serves of yoghurt, custard, and cheese per day). Test–retest reliability, as assessed by Spearman rank correlation coefficient, was highest for serves of yoghurt per day (0.86 95 per cent CI 0.83–0.89), although 0.6 per cent of respondents were not able to estimate their yoghurt intake. Reported yoghurt intake at test and retest differed by less than 0.1 of a serve for at least 50 per cent of respondents (Appendix 4). Ninety per cent of respondents differed by less than plus or minus half a serve. There was evidence of small, but statistically significant, increase in reported yoghurt intake from test to retest (p=0.04).

The Spearman rank correlation coefficient was 0.71 (95 per cent CI 0.66–0.75) for cups of milk per day. Reported milk intake differed at test and retest by less than 0.15 of a serve per day for 50 per cent of respondents, and less than 1.3 serves per day for 90 per cent of respondents. Two per cent of respondents differed from test to retest by more than three serves per day.

Test–retest reliability, as assessed by Spearman rank correlation coefficient was 0.63 (95 per cent CI 0.55–0.70) for serves of custard per day. Reported custard intake differed at test and retest by less than 0.15 of a serve per day for 90 per cent of respondents. There was evidence of small, but statistically significant, increase in reported custard intake from test to retest (p<0.01).

The Spearman rank correlation coefficient was 0.70 (95 per cent CI 0.66–0.74) for serves of cheese per day. Reported cheese intake differed at test and retest by less than 0.15 of a serve per day for 50 per cent of respondents, and less than one serve per day for 90 per cent of respondents.

Prevalence of musculoskeletal disease
There was a high degree of consistency between testing occasions for the arthritis and osteoporosis questions 'Have you ever been told by a doctor you have arthritis–osteoporosis?', with approximately 95 per cent of respondents classified the same at test and retest. Kappa was 0.87 (95 per cent CI 0.83–0.90) for arthritis and 0.79 (95 per cent CI 0.71–0.87) for osteoporosis. Fewer than one per cent of respondents were unable to answer these questions. There was a small, but statistically significant (p=0.007), decrease in the proportion of respondents that reported osteoporosis at the second testing occasion, from 7.7 per cent to 6.2 per cent (see Appendix 3), and Cohen and Scott's kappa were equivalent for this indicator.

Nutrition

Milk Type
The estimated test–retest reliability for two proposed milk questions 'What type of milk do you usually have?' and 'What type of milk do you usually consume?' was comparable. Almost 90 per cent of respondents consistently reported type of milk, and kappa for both questions was 0.83 (95 per cent CI 0.78–0.90). As shown in Table 4, convergent validity testing did not provide strong evidence of different prevalence (p= 1.0) for the two questions.

Vegetables
The test–retest reliability of an indicator for adequate vegetable intake is reported, in addition to reported serves per day. The recommended daily intake of vegetables is defined in the *Dietary Guidelines for Australian Adults* as four serves for females of any age and for males aged 16–18 years or over 60 years, and five serves for males aged 19–60 years.[12] One serve is equivalent to ½ cup cooked vegetables or one cup of salad vegetables.

For adequate vegetable intake, approximately 77 per cent of respondents were classified the same at test and retest, and the kappa statistic was 0.41 (95 per cent CI 0.35–0.49). The estimated test–retest reliability of serves of vegetables per day was 0.52 (95 per cent CI 0.46–0.58). Reported vegetable intake differed at test and retest by less than approximately one serve per day for 50 per cent of respondents, and less than plus or minus 2.7–3.0 serves per day for 90 per cent of respondents. Two per cent of respondents differed from test to retest by more than five serves per day (Appendix 4).

Pre-testing of the vegetable intake question by the ABS suggested that vegetable intake tends to be underestimated and focussed on fresh vegetables.[2] For this field-test around 70 per cent of respondents at test included potatoes in their reported vegetable intake, most commonly boiled and mashed potato (Table 5). Among those respondents that included boiled and mashed potato, more than half (59.9 per cent) did not include potatoes cooked by other methods. Further development work for this indicator could explore whether inclusions and exclusions are consistent across testing occasions, and whether this contributes to the relatively poor test–retest reliability of this indicator.

Table 5: Inclusion of potatoes in vegetable intake

Responses	No.	Per cent
Did not include potatoes	260	30.5
Included:		
Boiled–mashed potatoes	566	66.4
Roasted potatoes	205	24.0
Deep fried including chips–fries	73	8.6
Oven baked chips–fries	94	11.0

*Percentages are multiple response so will not sum to 100.

Fruit

The test–retest reliability of an indicator for adequate fruit intake is reported, in addition to reported serves per day. The recommended daily consumption of fruit is three serves for people aged 16 to 18 years, and two serves for people aged 19 years and over.[12] One serve is equivalent to one medium piece or two small pieces of fruit.

For adequate fruit intake, approximately 84 per cent of respondents were classified the same at test and retest, and the kappa statistic was 0.68 (95 per cent CI 0.62–0.73). The estimated test–retest reliability of serves of fruit per day was 0.77(95 per cent CI 0.74–0.81). Reported fruit intake differed at test and retest by less than one serve per day for 90 per cent of respondents (Appendix 4).

Pre-testing of the fruit intake question by the ABS suggested that respondents may be unclear whether to include fruit juice in their reported fruit intake.[2] Only 3.6 per cent of respondents included fruit juice without pulp or bottled fruit juice in their reported intake (Table 6).

Table 6: Inclusion of fruit juice in fruit intake

Responses	No.	Per cent
Did not include fruit juice	650	80.8
Do not drink fruit juice	117	14.5
Included:		
Squeezed fruit juice but without pulp or bottled	29	3.6
Freshly squeezed fruit juice including fruit pulp	14	1.7

Cancer: Sun protection

Estimated test–retest reliability varied for the five questions about sun protection. The highest test–retest reliability was for the questions relating to use of sunglasses, hats, and sunscreen in the last four weeks. More than 70 per cent of respondents answered these questions consistently at test and retest. The kappa statistics exceeded 0.67 (lower 95 per cent CI) for sunscreen, 0.70 for hats and 0.74 for sunglasses.

For the question 'In the last 4 weeks how often did you wear protective clothing?', per cent agreement was around 56 per cent, and the kappa statistic was 0.54 (95 per cent CI 0.49–0.58).

For the question 'In the last 4 weeks how often did you avoid being in the sun between 11.00 a.m. and 4.00 p.m.?', per cent agreement was around 49 per cent, and the kappa statistic was 0.45 (95 per cent CI 0.4–0.5).

The ABS has previously reported inconsistent interpretation of the response categories used for the sun protection questions, and recommended removal of the 'sometimes' category. Cross tabulations of the sun protection questions at the two testing occasions are shown in Appendix 4, and further analysis could examine the test–retest reliability of individual response categories, and make recommendations about potential test–retest reliability gains from collapsing categories.

Injury and injury prevention

Smoke detectors
There were high levels of agreement at test and retest for most questions in this module. Per cent agreement exceeded 95 per cent for having smoke detectors and the type of smoke detector (battery operated or wired into the electrical system), and kappa exceeded 0.88 (the lower 95 per cent CI for type of smoke detector). For those respondents that reported having a smoke detector at test, around 15 per cent did not know what type was installed in their home.

Around seven per cent of respondents at test did not know the last time their smoke alarm was deliberately tested. Among respondents that did, almost 70 per cent consistently reported the last time alarms were deliberately tested, and weighted kappa was 0.63 (95 per cent CI 0.57–0.65). The cross tabulation of responses from test and retest is shown in Appendix 4. Further analysis could investigate potential test–retest reliability gains associated with collapsing the more unreliable categories in the code frame.

First aid kit
Approximately 90 per cent of respondents were classified the same at test and retest for the question 'Do you have a first aid kit?'. The kappa statistic was estimated at 0.76 (95 per cent CI 0.71–0.81). Among those who did not have a first aid kit, 97 per cent of respondents consistently reported whether they have first aid supplies in their home. Kappa has not been precisely estimated for this indicator, because of sample size restrictions and a skewed distribution, but is estimated to vary upwards of 0.56 (lower 95 per cent CI).

Falls in the elderly
Around 92 per cent of respondents aged 65 years and over consistently answered the question 'In the last 12 months have you had a fall?'. Kappa was estimated as 0.80 (95 per cent CI 0.71–0.90). Test–retest reliability could not be precisely estimated for the remaining questions specifically about falls due to sample size restrictions.

The falls in the elderly module also included questions about exercise and barriers to exercise. For the two questions 'Do you currently undertake any form of exercise?' and 'Do you usually undertake any form of exercise', test–retest reliability was comparable, although not estimated precisely due to small sample sizes. As shown in Table 4 around 86–87 per cent of respondents consistently answered these questions. There is insufficient sample to assess the convergent validity of these questions, and additional field-testing in a targeted sample of people aged 65 years and over is recommended.

For the multiple response question 'What type of exercise do you do?', the code frame included responses walking, exercises at home, exercises in a group, swimming and dancing. Per cent agreement for these responses ranged from 84 per cent (walking) to 99 per cent (dancing). Kappa is not estimated precisely due to a reasonably small sample and highly skewed distributions, but varies upwards of 0.32 (95 per cent lower CI) for exercise in a group, and around 0.50 (95 per cent lower CI) for the other four types of exercise. For each type of exercise respondents were

asked to indicate how frequently this form of exercise was undertaken, and respondents that do not exercise were asked reasons for not exercise. Test–retest reliability was not estimated for these questions since the available sample was very small.

Physical activity

The proposed physical activity question 'How active are you?' was tested for convergent validity with an indicator of adequate physical activity derived from the *Active Australia Survey* questions.[3] For this question, data were collected via the NSW Continuous Health Survey, and included all interviews with people aged 16 years and over conducted between April and June 2004. The sampling and survey design is similar to that used for the field-testing, and has been described in detail elsewhere.[13] The question 'How active are you?' preceded the *Active Australia Survey* questions, to avoid biasing the global judgement of activity level.

The *Active Australia Survey* questions are: 'In the last week, how many times have you walked continuously for at least 10 minutes for recreation or exercise or to get to or from places?', 'What do you estimate was the total time you spent walking in this way in the last week?', 'In the last week, how many times did you do any vigorous physical activity that made you breathe harder or puff and pant?', 'What do you estimate was the total time you spent doing this vigorous physical activity in the last week?', 'In the last week, how many times did you do any other more moderate physical activity that you haven't already mentioned?', 'What do you estimate was the total time that you spent doing these activities in the last week?'. 'Adequate' physical activity is defined as undertaking physical activity for a total of 150 minutes per week over five separate occasions. The total minutes were calculated by adding minutes in the last week spent walking (continuously for at least 10 minutes), minutes doing moderate physical activity, plus double the minutes of vigorous physical activity.

Responses to the global physical activity question on the first testing occasion are shown below in Table 7. The majority of respondents consider themselves to be 'active' (58 per cent) or 'very active' (25 per cent).

Table 7: Agreement table for physical activity

Number (per cent)	Very active–Active	Not active	Total
Active Australia indicator	*Western Australia Health Survey* questions		
Adequate	1176 (45.7)	80 (3.1)	1256 (48.8)
Inadequate	975 (37.9)	342 (13.3)	1317 (51.2)
Total	2151 (83.6)	422 (16.4)	2573 (100.0)

There is strong evidence (*p*<.0001 Table 4) that the proportion of people reporting themselves as Very Active or Active (84 per cent) differs from the proportion of people that do 'adequate' physical activity as defined by the *Active Australia Survey* questions (49 per cent). Approximately 60 per cent of respondents were consistently classified as either adequate–active or inadequate–not active by the two

indicators. The kappa statistic was relatively low (Cohen's kappa=0.19), and remained so after adjustment for the observed bias (Scott's kappa=0.09).

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APPENDIX 1: Field Test Three Questions

Musculo skeletal disorders – calcium intake
Test-retest reliability testing only

CAL1: How many cups of milk do you usually drink in a day or a week? Please include soya milk.
 (1 cup=250ml, a household tea cup)

Answer in cups per day_____
Answer in cups per week _____
Doesn't have milk
Don't know
Refused

CAL2: How many serves of yoghurt do you usually have in a day or a week? One serve is a 200gm tub of yoghurt.
Answer in serves per day _____
Answer in serves per week _____
Doesn't have yoghurt
Don't know
Refused

CAL3: How many serves of custard do you usually have in a day or a week? One serve is 1 250ml cup of custard.
Answer in serves per day _____
Answer in serves per week _____
Doesn't have custard
Don't know
Refused

CAL4: How many serves of cheese do you usually have in a day or a week? One serve is 2 cheese slices or about 40g.
Answer in serves per day _____
Answer in serves per week _____
Doesn't have cheese
Don't know
Refused

Nutrition – fat intake
Test-retest reliability and convergent validity

NUT9: What type of milk do you usually have? Please include soya milk.
(Interviewer: Prompt for fat intake if not provided.)
1. Whole milk
2. Low or reduced fat
3. Skim
4. Soya milk - whole fat
5. Soya milk - reduced fat
6. Evaporated/sweetened condensed
7. Other (specify)
8. Don't have milk

NUT9b: What type of milk do you usually consume? Please include soya milk.
(Interviewer: Prompt for fat intake if not provided.)
single response
1. Whole milk
2. Low or reduced fat
3. Skim
4. Soya milk - whole fat
5. Soya milk - reduced fat
6. Evaporated/sweetened condensed
7. Other (specify)
8. Don't have milk
9. Refused

Nutrition – fruit and vegetables
Test-retest reliability testing only

NUT1: How many serves of vegetables do you usually eat each day or week? A serve of vegetables is half a cup of cooked vegetables or 1 cup of salad.

_____Number of serves

Don't know
Refused

NUT10: When you answered the last question, did you include potatoes?
Prompt for method of cooking
1. Yes – boiled
2. Yes – roasted
3. Yes- deep fried (chips, wedges, potato scallops)
4. Yes – oven baked fries
5. Did not include potatoes in previous question

NUT2: How many serves of fruit do you usually eat each day or week? A serve of fruit is 1 medium piece, 2 small pieces of fruit or 1 cup of diced fruit.

_____Number of serves

Don't know
Refused

NUT11: When you answered the last question, did you include fruit juice in your calculation?
1. Yes
2. Yes – freshly squeezed which includes fruit pulp
3. Don't drink fruit juice
4. No, did not include fruit juice in calculation

Musculo-skeletal
Test-retest reliability testing only

MUS1: Have you ever been told by a doctor that you have arthritis?
IF ASKED: Arthritis is a disease of connective tissue. There are several different types of arthritis, but osteoarthritis (OA) is one of the most common types. OA affects the cartilage in the joints. In OA the cartilage that cushions the joints breaks down.
1. Yes
2. No
3. Don't know
4. Refused

MUS2: Have you ever been told by a doctor that you have osteoporosis?
IF ASKED: Osteoporosis is a disease where bone density and structural quality deteriorate, leading to weakness and fragility of the skeleton and increased risk of fracture (breaking bones). Common sites to fracture are the wrist, hip, spine, pelvis and upper arm.
1. Yes
2. No
3. Don't know
4. Refused

Cancer – sun protection
Test-retest reliability testing only

The next few questions are about occasions in the last four weeks when you were outside in the sun for at least fifteen minutes. Please think about actions you usually took for sun protection on these occasions.

SPSV7: In the last 4 weeks how often did you avoid being in the sun between 11am and
  4pm: would you say always, often, sometimes, rarely or not in the last 4 weeks?
1. Always
2. Often
3. Sometimes
4. Rarely
5. Not in the last 4 weeks
6. Don't know
7. Refused

SPSV8: In the last 4 weeks how often did you wear sunglasses with uv (ultra violet) protection when in the sun: would you say always, often, sometimes, rarely
  or not in the last 4 weeks?
Interviewer note: This includes transition glasses.
1. Always
2. Often
3. Sometimes
4. Rarely
5. Not in the last 4 weeks
6. Don't know
7. Refused

SPSS2: In the last 4 weeks, when you were out in the sun for more than 15 minutes, how often did you wear a broad brimmed hat or cap with a back flap? Would you say always, often, sometimes, rarely or not in the last 4 weeks?
1. Always
2. Often
3. Sometimes
4. Rarely
5. Not in the last 4 weeks
6. Don't know
7. Refused

SPSV9: In the last 4 weeks how often did you wear protective clothing, including a hat, when in the sun: would you say always, often, sometimes, rarely or not in the last 4 weeks?
1. Always
2. Often
3. Sometimes
4. Rarely
5. Never in the sun for more than 15 minutes.
6. Don't know
7. Refused

SPSV10: In the last 4 weeks how often did you use sun screen: would you say always, often, sometimes, rarely or not in the last 4 weeks?
1. Always
2. Often
3. Sometimes
4. Rarely
5. Never in the sun for more than 15 minutes.
6. Don't know
7. Refused

Safety practices in the home

INJ17: Do you have smoke detectors in your home?
1. Yes
2. No → next section
3. Don't know → next section
4. Refused → next section

INJ17b: What type of smoke detector do you have in your home?
1. Battery operated
2. Wired into electrical system
3. Don't know
4. Refused

INJ18: When was the last time you or someone else deliberately tested all of the smoke detectors in your home?
1. Within the last month
2. Within the past 6 months
3. Within the past year
4. One or more years ago
5. Never
6. Don't know
7. Refused

INJ35: Do you have a first aid kit?
1. Yes → next section
2. No
3. Don't know
4. Refused → next section

INJ36: Do you have supplies of bandages, bandaids, antiseptic or other first aid equipment in your home?
1. Yes
2. No
3. Don't know
4. Refused

Physical activity

The following question was inserted into the NSW Population Health Survey in quarter 2 of 2004. It was tested against the Active Australia physical activity question module.

PHYS2: How active are you?
1. Very active
2. Active
3. Not active
4. Don't know
5. Refused

Injury – falls in the elderly

(Asked of people 65 years and over)
Test-retest reliability testing only

INJ22: In the last 12 months have you had a fall?
1. Yes
2. No →Q22
3. Don't know →Q22
4. Refused →Q22

INJ23: How many times did you fall in the last 12 months?
1. Once
2. Twice
3. Three times or more
4. Don't know
5. Refused

INJ24: In the last 12 months have you had a fall which required medical treatment for injuries?
1. Yes
2. No →Q22
3. Don't know →Q22
4. Refused →Q22

INJ25: Were you ADMITTED to hospital as a result of any of your falls in the last 12 months?
1. Yes
2. No
3. Don't know
4. Refused

INJ26: Do you currently undertake any form of exercise?
1. Yes
2. No → Q25
3. Don't know → Q25
4. Refused → Q25

INJ26b: Do you usually undertake any form of exercise?
1. Yes
2. No → Q25
3. Don't know → Q25
4. Refused → Q25

INJ26 and INJ26B tested for convergent validity

INJ27: What type of exercise do you do?
Multiple response
1. Walking
2. Exercises at home
3. Exercises in a group
4. Swimming
5. Dancing
6. Other (Specify)
7. Don't know
8. Refused

INJ28: How often do you do this (from question above) exercise?

_____Record number of times per day
_____Record number of times per week
_____Less than once a week
Don't know
Refused

INJ34: What is the reason you did not participate in any exercise?
1. Ill health
2. Not interested
3. No appropriate activities in my area
4. Activities which exist are too expensive
5. No transport to reach activities
6. Too busy
7. Other [SPECIFY]
8. Don't know
9. Refused

APPENDIX 2: Interviewer Notes for Field Test Pilot Debrief

- Feel that if answer to CAL1 is "doesn't have milk" then survey should skip NUT9 "what is your normal type of milk you drink".

- Can NUT9 be interposed in the CAL questions to appear after CAL1b so we ask what type of milk after the question on quantity.

- David felt the questions on serves of dairy had a slight "forcing" effect – by emphasising "per day" people were rounding up to too high a figure. I had the example of a person having an average of 3 serves of yoghurt and/or custard per week but no provision to put in 1.5 of each.

- In particular adults do not normally eat yoghurt and custard in cupfuls per day, and by emphasising "per day" in the first question people are exaggerating their consumption, eg one cup per day when it is really only over 5 days per week etc. We feel the same applies to the question on fruit consumption NUT2.

- Need a more complete list of vegetables at NUT10, basically as many as can be fitted on the screen – there is an inherent difficulty in switching between the "other" vegetables and inserting those stated (many of which are common eg cucumber, beetroot), and those currently listed. Also people often list "corn" or "corn on the cob" rather than sweet corn, is there a difference?

- We also wondered whether there could be a way to speed up the data entry on the NUT10 screen, for example having the vegetables in alphabetical order and allowing the key stroke "b" to call up beetroot, broccoli etc. Respondents tended to rattle off their usual vegetables.

- Are interviewers expected to prompt in some way to elucidate the difference between boiled and mashed potatoes, and the fried etc potatoes on the other. David mentioned one respondent pointed out they always had "steamed vegetables"; this raises the question of "stir fried vegetables" and what category these should be placed in, if relevant.

- Generally in the nutrition questions would it be useful to allow for half serves, alternatively, should we have a principle of rounding down or rounding up.

- A common answer to NUT11 was "I don't have fruit juice".

- At MUS2 a respondent said, "what's the difference between arthritis and osteoporosis?"

- The wording of SPSV7 "How often do you avoid going out in the sun…" has the sense of a double negative, particularly when the correct answer is "never", and both David and I found the form of this question

extremely awkward for both respondent and interviewer.

- (1) As to use of UV glasses SPSV8 respondents mentioned they have glasses which "change" or "adjust" – need clarification if these fall within the category. (2) If answer to SPSV9 is "never a hat" but use other protection eg long sleeves, how does one categorise a respondent who uses some protective clothing all of the time.

- (1) INJ17: use/testing of smoke detectors in your home: does this refer to the house rung at, or respondent's principal home. (2) INJ26: "current" exercise: referring to as of today, this week, eg man who normally does a lot of exercise, but can't "currently" because of work injury.

- David pointed out that the codes in INJ28a and INJ28b change from times per week to days per week. If the respondent replies 4 times per week, at present the interviewer has to clarify whether that was on more than 3 days: one respondent answered that he/she at the weekend went on 4 walks over 2 days. The pilot interviewers feel that, all things being equal, the NSWHSP format of asking for number of times walking over the last week is preferable.

- Most importantly, we found difficulty in the persons in household question: better to ask the total number of people in house, work out how many children <6, adults >65, then work out class, then ask for 3rd eldest person 16 or over, eg person and interviewer confusing request to speak to 4th oldest person between adults and children.

APPENDIX 3: Interviewer Notes for Field Test Survey Debrief

TRG Interviewer feedback discussed at meeting on Mon 28 June 2004

- IN1 (Interviewer 89): felt there should have been a mention of topics to be covered such as "nutrition, fire safety and sun protection" to reduce the number of refusals.

- CAL1 (Interviewer 89): "drink" should be "consume" or "have"; do people drink, when they "eat" breakfast cereal?

- For the calcium questions, including "or week" causes confusion eg do you want a reply by day or week, with possibility for interviewer to clarify any confusion. Interviewer 89 felt this was a consistent problem with all the nutrition questions.

- The mention of soybean milk was a nuisance, as, instead of making a response, people said, "we don't use soybean milk".

- The available response choices for the calcium questions are insufficient: should include something like "not regularly", or "sometimes" or "occasionally (less than once per week)". Again, this should be added to all the nutrition questions.

- "Doesn't have milk" is usually factually incorrect.

- CAL1 (Interviewer 53): the verb "drink" is misleading – often found people taking it to mean drinking plain milk on its own "no I don't drink milk", but in reality had 2 cups per day on cereal and in tea or coffee etc. "Have" would be better. Just how accurate these estimates are is doubtful. Should it be how many mls of milk per week, maybe people are able to report that better: eg x litres per week. Interviewer 53 checked some of these "ie you have 2 cups that's half a litre" answer "oh no, more, or less than that". Custards etc do these include: rice custard, yo-go, drinking yoghurt

- CAL2 (Interviewer 89): should give an example of what 200gm of yoghurt is eg "tub in 2 or 6 pack"

- See also comments re milk such as a response choice "occasionally", "once a week etc".

- CAL3 (Interviewer 89): Should allow for response "occasionally", "once a week etc".

- CAL4 (Interviewer 89): Should allow for response "occasionally", "once a week etc".

- CAL4 (Interviewer 65): Sensed that describing 40g as 2 cheese slices was helpful in how much cheese 40g actually is.

- CAL4 (Interviewer 8): "one serve is 2 cheese slices or about 40g" works better, gains a clearer response than just "40g cheese".

- NUT9 (Interviewer 89): the choice response should be expanded to include a definition of "whole milk" as a lot of people said "regular" "fat" or "normal" milk.

- NUT1 (Interviewer 89): The description of the serve should be "One serve is half a cup of cooked vegetables or 1 cup of salad vegetables" with an indication of what sort of cup a cup is eg a tea cup, a household cup etc.

- NUT1 (Interviewer 65): Many respondents had difficulty in understanding this one.

- NUT1 (Interviewer 8): The wording of "a serve" still needs more clarification by the interviewer. Respondents often respond by equating one serve with one meal

- NUT1 (Interviewer 53): No more than 3% of respondents are able to answer the question accurately, because people cannot combine mixed measurements in their head, on paper yes, but not mentally. The two questions need to be asked separately ie cooked and salad. As to cooked vegetables, ask how many cups, and then we should calculate or code the serves.

- NUT1 (Interviewer 41): Never liked this question – consider it two questions in one – asking for two separate scales for cooked and salad vegetables respectively in the same question confuses the respondent.

- NUT2 (Interviewer 53): Do we include dried fruit and do we include canned fruit – need to have interviewer notes as to whether they should be included or not.

- NUT10 (Interviewer 89): "steamed" should be added to "boiled/mashed"; many respondents referred to potatoes "steamed" in a microwave.

- NUT10 (Interviewer 8): Feels the specific mention of potatoes is a good addition, but the inclusion of a question on fried chips/wedges/crisps per week or month is still important as a measure of the amount of fried food people consume. Perhaps another question on the serves of take-away fried food people consume could be included.

- NUT10 (Interviewer 53): How do you code other types of potato eg au gratin with milk, raw potato, grated potato, and potato cakes. Did not have category "don't eat potato" as opposed to the fruit juice question. This confusion would tend to exclude from the vegetable intake "good" potatoes" where the respondent doesn't include potatoes in the first answer to NUT1.

- NUT10 (Interviewer 88): Some respondents found this postscript confusing.

- NUT11 (Interviewer 89): Felt the questions do not take into account people who do not "eat fruit" but who do drink fruit juice with pulp.

- NUT11 (Interviewer 8): The inclusion of fruit juice with regard to adults is useful, as there has not been a separate question on the consumption of fruit juice/poppers by adults, hitherto.

- NUT11 (Interviewer 88): Some respondents found this postscript confusing.

- MUS1 and MUS2 (interviewer 89): Notwithstanding the explanatory notes, Interviewer 89 felt there was confusion between osteoporosis and osteoarthritis, which meant that at MUS2 the interviewers had to go back to MUS1.

- MUS1 (Interviewer 53): Some doubts as to whether the question extends to people who previously had arthritis and no longer do , or were mistakenly diagnosed etc. Some said, "I don't need the doctor to tell me, I had to tell the doctor" - some respondents felt the question was patronising.

- SPSV (Interviewer 89): The sun protection questions created issues when asked during "winter", perhaps they should refer to "last summer".

- SPSV (Interviewer 53): Intro and some questions refer to more than 15 minutes but not all questions are consistent.   Answer "often" should have been "most of the time". Cf. exercise, hot chips etc.

- SPSV7 (Interviewer 53): Confounding – some people avoid being in the sun as a means of sun protection – others would like to be in the sun, but are not able due to work – how do you treat the issue of intentional avoidance or enforced avoidance, apart from the obvious double negative involved in the question. An office worker might say "I didn't avoid", but effect was not to go into the sun because of work commitments. Response 5 is confounding – includes both people who never avoided therefore always in the sun, with people who never avoided but were not in the sun anyway.

- SPSV8 (Interviewer 89): Felt the phrase "uv (ultra violet) protection" should read "ultra violet (uv) protection". Also it prompted the issue as to whether driving was an activity out in the sun or not.

- SPSV8 (Interviewer 53); Some people confused this as referring to sunglasses and uv cream, not sunglasses with uv protection in the glass or lens. Need interviewer notes to advise whether polaroid glasses have uv protection etc. Some people say "I've got long hair" - others refer to parasol.

- SPSS2 (Interviewer 89): Many respondents asked whether caps should be included.

- SPSV9 (interviewer 89): Many respondents asked what is "protective clothing"?

- SPSV9 (Interviewer 53): Need definition of protective clothing – rash shirts, long sleeves etc. Compare use of "deliberately" in our survey. Some people included hats in this answer.

- SPSV10 (Interviewer 89): The question arose as to whether sun screen included in a cosmetic such as a moisturiser qualified as a response to this question.

- SPSV10 (Interviewer 53): … when in the sun – some people never used because never in the sun. Many people said they put sunscreen on their face but not on my body particularly women who said "in makeup but not on rest of body". Maybe the

  question should refer to "all of your exposed skin". Should there be some reference to renewal of sunscreen through the day at appropriate intervals.

- INJ17 (Interviewer 89): Should the question read "Do you have smoke *or fire* detectors in your home?"

- INJ17 (Interviewer 65): Use of term "smoke detectors" is good. It's a more common usage than say "fire alarm".

- INJ17 (Interviewer 8): Feels the separate questions on smoke detectors works well.

- INJ17b (Interviewer 89): Some houses have both battery and wired smoke detectors. In the absence of the ability to insert both, this interviewer coded the answer as 2 (wired into electrical system) for such a response.

- INJ17b (Interviewer 41): Consider this question incorrectly worded as a good percentage of respondents say "not sure what sure what brand or type" or "its round and on the ceiling". Perhaps the question could be reworded to "what power source is your smoke detector powered by?" or something similar.

- INJ17b (Interviewer 53): mentioning that some people have more than one type, needs multiple response. "no I don't smoke" was an occasional answer. There are also "wind up" detectors etc.

- INJ18 (Interviewer 89): Several people mentioned that they tested the smoke detectors between the two interviews, which may have skewed the reliability of the response.

- INJ35 & INJ36 (Interviewer 89): Felt these two questions should be combined.

- INJ27 (Interviewer 89): The list given was too short and did not include bowls and golf (moderate activity), also did not include very active types such as jogging, football, hockey. Some people had several "other" activities.

- INJ27 (Interviewer 8): The questions on exercise work well – they are simple and specific and easily understood. However, the exercise done by country people, people living and working on properties is not accounted for.

- INJ27 (Interviewer 53): should extend to golf, bowls, and are these considered to be done in groups, they are typical exercise for the age group. Need to consider carefully whether a read out or not, as dancing doesn't occur to people as exercise. Should there be an interviewer note to include/exclude gardening, lawn mowing etc.

- INJ34 (Interviewer 53): Conflict of tense in question – when: yesterday, usually, last week etc ie should ask why exercise not undertaken in sense tense and same parameter as originally, thus "what is the reason you do you not currently/usually participate in any exercise"

APPENDIX 4: Frequency and Agreement Tables

Musculoskeletal disorders - Adequate calcium intake

```
                    Frequencies - First Test


                                      Cumulative   Cumulative
     Adequate Calcium Frequency    Percent   Frequency    Percent
     ─────────────────────────────────────────────────────────────
     Not adequate         386      45.52        386       45.52
     Adequate             460      54.25        846       99.77
     Don't Know             2       2.00        848      100.00


                    Frequencies - Repeat Test


                                      Cumulative   Cumulative
     Adequate Calcium Frequency    Percent   Frequency    Percent
     ─────────────────────────────────────────────────────────────
     Not adequate         357      42.10        357       42.10
     Adequate             474      55.90        831       98.00
     Don't Know            17       2.00        848      100.00



                Table of adeq_calc by r_adeq_calc

          adeq_calc        r_adeq_calc

          Frequency
          Percent      Not adeq Adequate    Total
                       uate
          ────────────────────────────────────────
          Not adequate      277      101      378
                          33.66    12.27    45.93
          ────────────────────────────────────────
          Adequate           77      368      445
                           9.36    44.71    54.07
          ────────────────────────────────────────
          Total             354      469      823
                          43.01    56.99   100.00

                Frequency Missing = 8
                  McNemar's Test
              ───────────────────────────
              Statistic (S)    3.2360
              DF                    1
              Pr > S           0.0720
```

How many cups of milk do you usually drink in a day or week?' (analysis =cups/day)

Test
```
                      Basic Statistical Measures

            Location                      Variability

         Mean     1.250169    Std Deviation          1.06389
         Median   1.000000    Variance               1.13186
         Mode     1.000000    Range                  7.00000
                              Interquartile Range    1.42857
```

Retest
```
                      Basic Statistical Measures

            Location                      Variability

         Mean     1.275220    Std Deviation          1.19230
         Median   1.000000    Variance               1.42159
         Mode     1.000000    Range                 10.00000
                              Interquartile Range    1.57143
```

Difference (retest – test)
```
                      Basic Statistical Measures

            Location                      Variability

         Mean     0.025051    Std Deviation          0.96978
         Median   0.000000    Variance               0.94047
         Mode     0.000000    Range                 13.14286
                              Interquartile Range    0.28571



                       Quantiles (Definition 5)

                       Quantile       Estimate

                       100% Max       8.571429
                       99%            3.285714
                       95%            1.285714
                       90%            1.000000
                       75% Q3         0.142857
                       50% Median     0.000000
                       25% Q1        -0.142857
                       10%           -1.000000
                       5%            -1.142857
                       1%            -3.000000
                       0% Min        -4.571429


                     Tests for Location: Mu0=0

            Test           -Statistic-    -----p Value------

            Student's t    t  0.750446    Pr > |t|    0.4532
            Sign           M       3.5    Pr >= |M|   0.7776
            Signed Rank    S      3316    Pr >= |S|   0.2311
```

Plot of difference versus mean values: Serves of milk per day
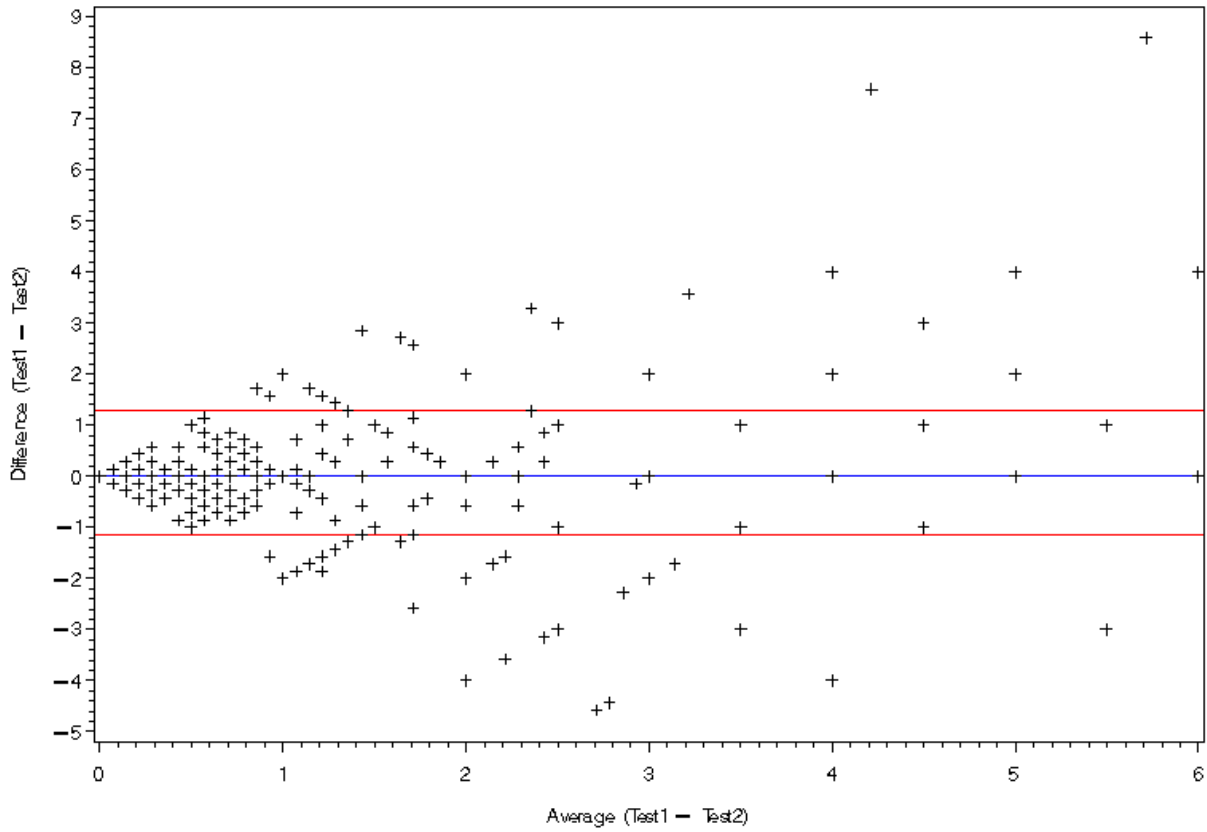
How many serves of yoghurt do you usually have in a day or week?' (analysis=serves/day)

Test

```
                Basic Statistical Measures

        Location                    Variability

        Mean      0.265038   Std Deviation          0.45877
        Median    0.000000   Variance               0.21047
        Mode      0.000000   Range                  7.00000
                             Interquartile Range    0.42857
```

Retest

```
                Basic Statistical Measures

        Location                    Variability

        Mean      0.274265   Std Deviation          0.39598
        Median    0.142857   Variance               0.15680
        Mode      0.000000   Range                  2.00000
                             Interquartile Range    0.42857
```

Difference (retest – test)

```
                Basic Statistical Measures

        Location                    Variability

        Mean      0.009228   Std Deviation          0.33981
        Median    0.000000   Variance               0.11547
        Mode      0.000000   Range                  8.28571
                             Interquartile Range          0


                Quantiles (Definition 5)

                Quantile       Estimate

                100% Max       1.428571
                99%            1.000000
                95%            0.428571
                90%            0.142857
                75% Q3         0.000000
                50% Median     0.000000
                25% Q1         0.000000
                10%           -0.142857
                5%            -0.285714
                1%            -0.857143
                0% Min        -6.857143


                Tests for Location: Mu0=0

        Test           -Statistic-      -----p Value------

        Student's t    t  0.785155   Pr > |t|    0.4326
        Sign           M        17   Pr >= |M|   0.0367
        Signed Rank    S      2520   Pr >= |S|   0.0252
```

Plot of difference versus mean values: Serves of yoghurt per day
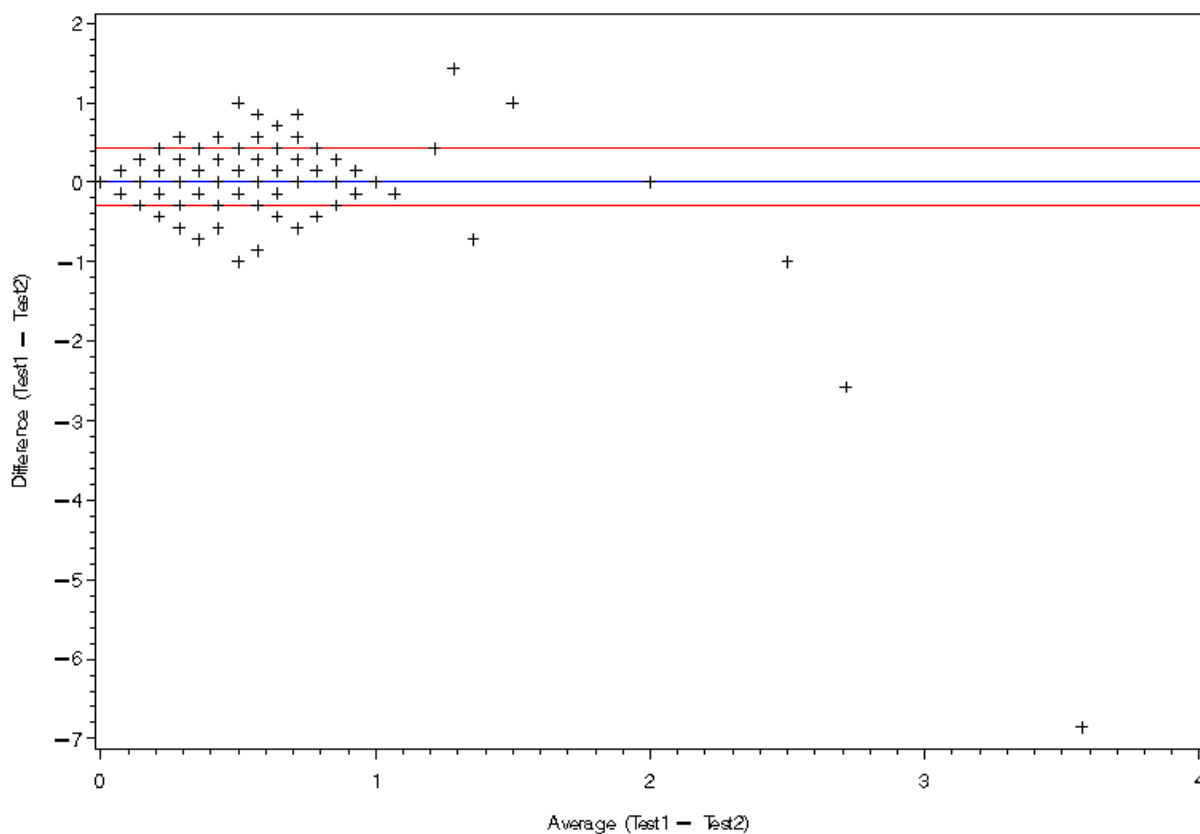
How many serves of custard do you usually have in a day or week?' (analysis=serves/day)

Test

```
                    Basic Statistical Measures

            Location                      Variability

        Mean      0.042077    Std Deviation           0.13264
        Median    0.000000    Variance                0.01759
        Mode      0.000000    Range                   1.00000
                              Interquartile Range           0
```

Retest

```
                    Basic Statistical Measures

            Location                      Variability

        Mean      0.055141    Std Deviation           0.16673
        Median    0.000000    Variance                0.02780
        Mode      0.000000    Range                   2.00000
                              Interquartile Range           0
```

Difference (retest – test)

```
                    Basic Statistical Measures

            Location                      Variability

        Mean      0.013064    Std Deviation           0.10309
        Median    0.000000    Variance                0.01063
        Mode      0.000000    Range                   1.57143
                              Interquartile Range           0


                    Quantiles (Definition 5)

                    Quantile       Estimate

                    100% Max       1.000000
                    99%            0.428571
                    95%            0.142857
                    90%            0.142857
                    75% Q3         0.000000
                    50% Median     0.000000
                    25% Q1         0.000000
                    10%            0.000000
                    5%            -0.142857
                    1%            -0.285714
                    0% Min        -0.571429


                    Tests for Location: Mu0=0

          Test           -Statistic-      -----p Value------

          Student's t    t  3.677191    Pr > |t|    0.0003
          Sign           M     21.5     Pr >= |M|   0.0003
          Signed Rank    S   2638.5     Pr >= |S|   <.0001
```

Plot of difference versus mean values: Serves of custard per day
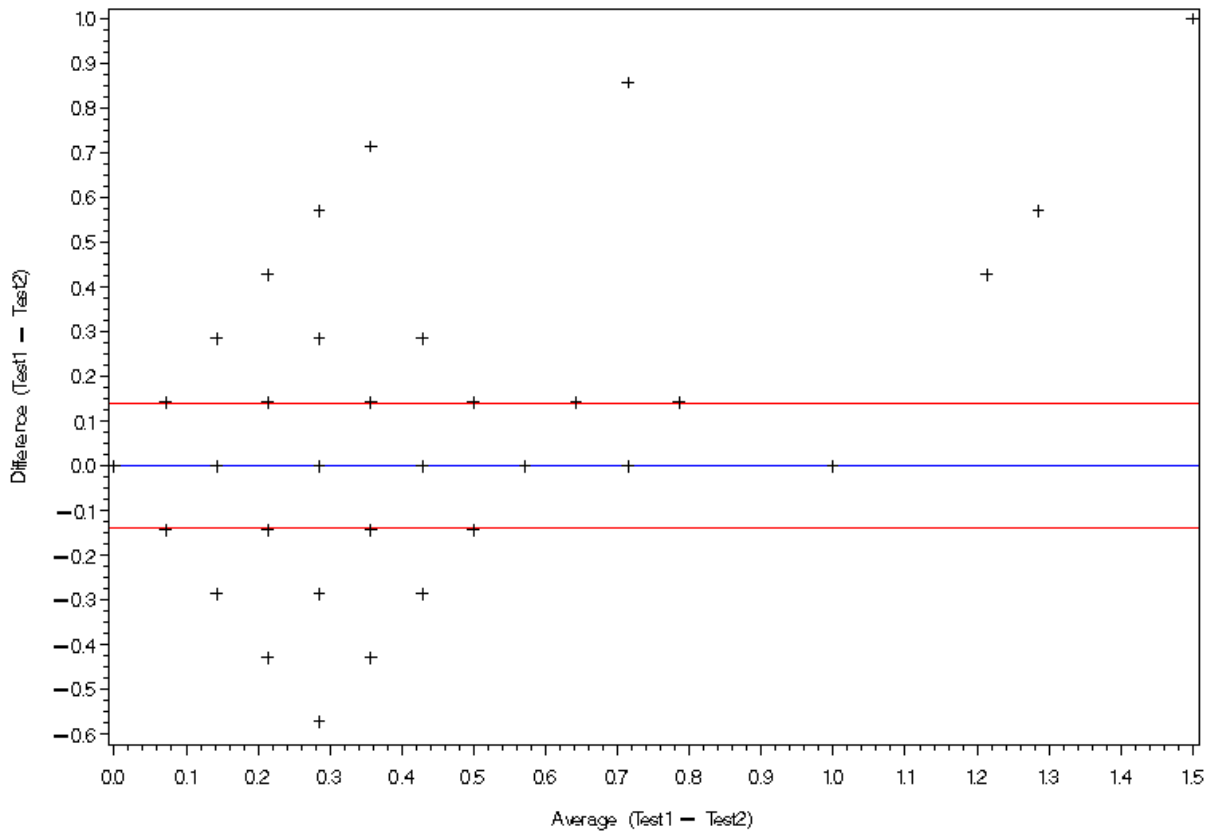
How many serves of cheese do you usually have in a day or week?' (analysis=serves/day)

Test

```
                    Basic Statistical Measures

            Location                    Variability

         Mean     0.727924    Std Deviation         0.87198
         Median   0.500000    Variance              0.76035
         Mode     1.000000    Range                12.00000
                              Interquartile Range   0.71429
```

Retest

```
                    Basic Statistical Measures

            Location                    Variability

         Mean     0.728606    Std Deviation         0.76219
         Median   0.500000    Variance              0.58093
         Mode     1.000000    Range                 8.00000
                              Interquartile Range   0.71429
```

Difference (retest – test)

```
                    Basic Statistical Measures

            Location                    Variability

         Mean     0.000682    Std Deviation         0.73197
         Median   0.000000    Variance              0.53578
         Mode     0.000000    Range                15.85714
                              Interquartile Range   0.28571

                    Quantiles (Definition 5)

                    Quantile        Estimate

                    100% Max        7.857143
                    99%             1.857143
                    95%             1.000000
                    90%             0.571429
                    75% Q3          0.142857
                    50% Median      0.000000
                    25% Q1         -0.142857
                    10%            -0.571429
                    5%             -1.000000
                    1%             -1.857143
                    0% Min         -8.000000


                 Tests for Location: Mu0=0

          Test           -Statistic-     -----p Value------

          Student's t    t  0.026968    Pr > |t|    0.9785
          Sign           M        15    Pr >= |M|   0.1999
          Signed Rank    S    3459.5    Pr >= |S|   0.3004
```

Plot of difference versus mean values: Serves of cheese per day
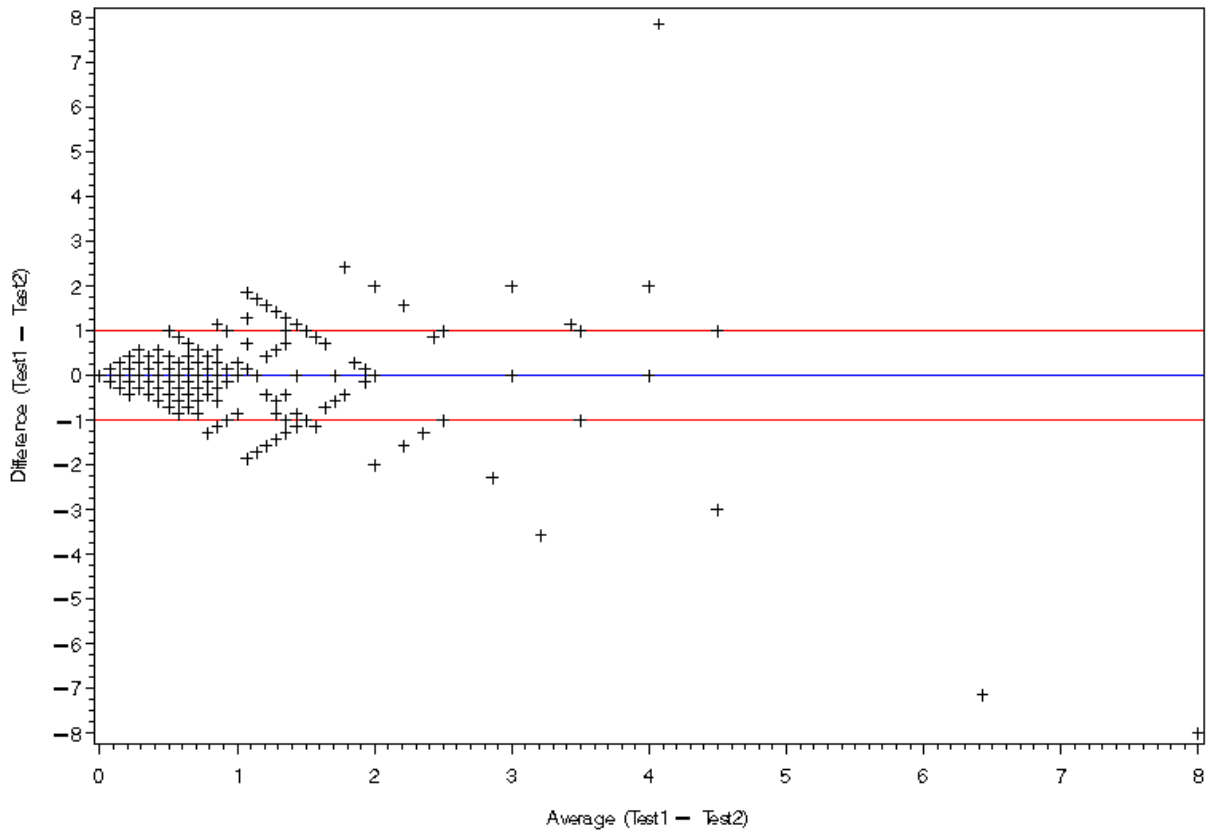
Have you ever been told by a doctor that you have arthritis?

```
                      Frequencies - First Test

                      Ever told have arthritis

                                       Cumulative   Cumulative
   MUS1          Frequency    Percent   Frequency     Percent
   ────────────────────────────────────────────────────────────
   Yes                242      28.54         242       28.54
   No                 605      71.34         847       99.88
   Don't know           1       0.12         848      100.00



                      Frequencies - Repeat

                      Ever told have arthritis

                                       Cumulative   Cumulative
   R_MUS1        Frequency    Percent   Frequency     Percent
   ────────────────────────────────────────────────────────────
   Yes                236      27.83         236       27.83
   No                 611      72.05         847       99.88
   Don't know           1       0.12         848      100.00




                  Table of MUS1 by R_MUS1

        MUS1(MUS1 : Ever told have arthritis)
                R_MUS1(MUS1_X : Ever told have arthritis)
        Frequency │
        Percent   │ Yes     │ No      │  Total
                  ┼─────────┼─────────┼
        ──────────
        Yes       │     216 │      26 │    242
                  │   25.53 │    3.07 │  28.61
        ──────────┼─────────┼─────────┼
        No        │      20 │     584 │    604
                  │    2.36 │   69.03 │  71.39
        ──────────┼─────────┼─────────┼
        Total          236       610      846
                     27.90     72.10   100.00



        Statistics for Table of MUS1 by R_MUS1

                   McNemar's Test
              ───────────────────────────
              Statistic (S)    0.7826
              DF                    1
              Pr > S           0.3763


                  Sample Size = 846
```

Have you ever been told by a doctor that you have osteoporosis?

```
                          Frequencies - First Test

                        Ever told have osteoporosis
                                        Cumulative    Cumulative
        MUS2         Frequency    Percent    Frequency      Percent
        ───────────────────────────────────────────────────────────
        Yes                 66       7.78          66         7.78
        No                 778      91.75         844        99.53
        Don't know           4       0.47         848       100.00


                          Frequencies - Repeat Test
                        Ever told have osteoporosis

                                        Cumulative    Cumulative
        MUS2         Frequency    Percent    Frequency      Percent
        ───────────────────────────────────────────────────────────
        Yes                 54       6.37          54         6.37
        No                 792      93.40         846        99.76
        Don't know           2       0.24         848       100.00



                        Table of MUS2 by R_MUS2

            MUS2(MUS2 : Ever told have osteoporosis)
                    R_MUS2(MUS2_X : Ever told have osteoporosis)
            Frequency │
            Percent   │Yes     │No      │   Total

            ──────────┼────────┼────────┼
            Yes       │     47 │     18 │      65
                      │   5.58 │   2.14 │    7.72
            ──────────┼────────┼────────┼
            No        │      5 │    772 │     777
                      │   0.59 │  91.69 │   92.28
            ──────────┼────────┼────────┼
            Total           52      790        842
                          6.18    93.82     100.00



            Statistics for Table of MUS2 by R_MUS2

                    McNemar's Test
                  ─────────────────────────
            Statistic (S)      7.3478
            DF                      1
            Pr > S             0.0067


                Sample Size = 842
```

What type of milk do you usually have? Please include soya milk

Frequencies - First Test

NUT9 : Type of milk have

NUT9	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Whole milk	130	46.10	130	46.10
Low or reduced fat	97	34.40	227	80.50
Skim	36	12.77	263	93.26
Soya milk - whole fat	3	1.06	266	94.33
Soya milk - redcued fat	7	2.48	273	96.81
Evaporated/sweetened condensed	1	0.35	274	97.16
Other (specify)	8	2.84	282	100.00

Frequencies - Repeat Test

NUT9_X : Type of milk have

R_NUT9	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Whole milk	133	47.16	133	47.16
Low or reduced fat	97	34.40	230	81.56
Skim	36	12.77	266	94.33
Soya milk - whole fat	3	1.06	269	95.39
Soya milk - redcued fat	7	2.48	276	97.87
Other (specify)	5	1.77	281	99.65
Don't know	1	0.35	282	100.00

Test-test-retest reliability: Use Simple Kappa

Table 1 of NUT9 by R_NUT9

NUT9(NUT9 : Type of milk have)   R_NUT9(NUT9_X : Type of milk have)

Frequency Percent	Whole milk	Low or reduced fat	Skim	Soya milk - whole fat	Total
Whole milk	127	1	0	1	129
	45.20	0.36	0.00	0.36	45.91
Low or reduced fat	4	85	8	0	97
	1.42	30.25	2.85	0.00	34.52
Skim	0	9	26	0	36
	0.00	3.20	9.25	0.00	12.81
Soya milk - whole fat	0	0	1	2	3
	0.00	0.00	0.36	0.71	1.07

Soya milk - redcued fat	0 0.00	0 0.00	1 0.36	0 0.00	7 2.49
Evaporated/sweetened condensed	1 0.36	0 0.00	0 0.00	0 0.00	1 0.36
Other (specify)	1 0.36	2 0.71	0 0.00	0 0.00	8 2.85
Total	133 47.33	97 34.52	36 12.81	3 1.07	281 100.00

(Continued)

Table 1 of NUT9 by R_NUT9

NUT9(NUT9 : Type of milk have)   R_NUT9(NUT9_X : Type of milk have)

Frequency Percent	Soya milk - redcued fat	Evaporated/sweetened condensed	Other (specify)	Total
Whole milk	0 0.00	0 0.00	0 0.00	129 45.91
Low or reduced fat	0 0.00	0 0.00	0 0.00	97 34.52
Skim	1 0.36	0 0.00	0 0.00	36 12.81
Soya milk - whole fat	0 0.00	0 0.00	0 0.00	3 1.07
Soya milk - redcued fat	6 2.14	0 0.00	0 0.00	7 2.49
Evaporated/sweetened condensed	0 0.00	0 0.00	0 0.00	1 0.36
Other (specify)	0 0.00	0 0.00	5 1.78	8 2.85
Total	7 2.49	0 0.00	5 1.78	281 100.00

Statistics for Table 1 of NUT9 by R_NUT9

Test of Symmetry
_____

Statistic (S)	7.8588
DF	21
Pr > S	0.9957

Sample Size = 281

What type of milk do you usually consume? Please include soya milk

```
                    Frequencies - First Test

                NUT9b : Type of milk consumed

                                          Cumulative    Cumulative
    NUT9b                 Frequency   Percent   Frequency    Percent
    ─────────────────────────────────────────────────────────────────
    Whole milk                 130     46.59        130       46.59
    Low or reduced fat          86     30.82        216       77.42
    Skim                        47     16.85        263       94.27
    Soya milk - whole fat        3      1.08        266       95.34
    Soya milk - reduced fat      8      2.87        274       98.21
    Evaporated/sweetened condensed 1    0.36        275       98.57
    Other (specify)              3      1.08        278       99.64
    Don't know                   1      0.36        279      100.00


                    Frequencies - Repeat Test

              R_NUT9b : Type of milk consumed

                                          Cumulative    Cumulative
    R_NUT9b               Frequency   Percent   Frequency    Percent
    ─────────────────────────────────────────────────────────────────
    Whole milk                 125     44.80        125       44.80
    Low or reduced fat          88     31.54        213       76.34
    Skim                        50     17.92        263       94.27
    Soya milk - whole fat        2      0.72        265       94.98
    Soya milk - reduced fat      7      2.51        272       97.49
    Other (specify)              7      2.51        279      100.00


                  Table 1 of NUT9b by R_NUT9b
```

NUT9b(NUT9b : Type of milk consumed)

R_NUT9b(NUT9b_X : Type of milk consumed)

Frequency Percent	Whole milk	Low or reduced fat	Skim	Soya milk - whole fat	Total
Whole milk	121	5	1	2	130
	43.53	1.80	0.36	0.72	46.76
Low or reduced fat	1	75	8	0	86
	0.36	26.98	2.88	0.00	30.94
Skim	0	6	41	0	47
	0.00	2.16	14.75	0.00	16.91
Soya milk - whole fat	2	1	0	0	3
	0.72	0.36	0.00	0.00	1.08
Soya milk - reduced fat	0	1	0	0	8
	0.00	0.36	0.00	0.00	2.88
Evaporated/sweetened condensed	0	0	0	0	1
	0.00	0.00	0.00	0.00	0.36

```
─────────────────┬───────┬───────┬───────┬───────┬───────────
Other (specify)  │     0 │     0 │     0 │     0 │         3
                 │  0.00 │  0.00 │  0.00 │  0.00 │      1.08
─────────────────┴───────┴───────┴───────┴───────┴
Total                 124      88      50       2       278
                    44.60   31.65   17.99    0.72    100.00
(Continued)
```

Table 1 of NUT9b by R_NUT9b

NUT9b(NUT9b : Type of milk consumed)
R_NUT9b(NUT9b_X : Type of milk consumed)

Frequency Percent	Soya milk - reduced fat	Evaporated/sweetened condensed	Other (specify)	Total
Whole milk	0 0.00	0 0.00	1 0.36	130 46.76
Low or reduced fat	0 0.00	0 0.00	2 0.72	86 30.94
Skim	0 0.00	0 0.00	0 0.00	47 16.91
Soya milk - whole fat	0 0.00	0 0.00	0 0.00	3 1.08
Soya milk - reduced fat	7 2.52	0 0.00	0 0.00	8 2.88
Evaporated/sweetened condensed	0 0.00	0 0.00	1 0.36	1 0.36
Other (specify)	0 0.00	0 0.00	3 1.08	3 1.08
Total	7 2.52	0 0.00	7 2.52	278 100.00

Statistics for Table 1 of NUT9b by R_NUT9b

Test of Symmetry
```
─────────────────────────────
Statistic (S)      9.9524
DF                     21
Pr > S             0.9795
```

Sample Size = 278

Derived Indicator: Adequate Vegetable Intake

```
                   Frequencies - First Test

                                     Cumulative   Cumulative
    veg            Frequency   Percent   Frequency    Percent
    ─────────────────────────────────────────────────────────
    Adequate           223     26.30        223       26.05
    Not Adequate       620     73.11        843       99.41
    Refused              1      0.12        844       98.60
    Don't Know           4      0.47        848      100.00

                   Frequencies - Repeat Test

                                     Cumulative   Cumulative
    r_veg          Frequency   Percent   Frequency    Percent
    ─────────────────────────────────────────────────────────
    Adequate           204     24.06        204       24.06
    Not Adequate       633     74.65        837       98.70
    Don't Know          11      1.30        848      100.00


                   Table of veg by r_veg

        veg            r_veg

        Frequency  │
        Percent    │ Adequate │Not Adeq│  Total
                   │          │uate    │
        ───────────┼──────────┼────────┼─────────
        Adequate   │    119   │    99  │   218
                   │  14.41   │  11.99 │  26.39
        ───────────┼──────────┼────────┼─────────
        Not Adequate│    83   │   525  │   608
                   │  10.05   │  63.56 │  73.61
        ───────────┼──────────┼────────┼─────────
        Total          202        624      826
                      24.46      75.54   100.00



          Statistics for Table of veg by r_veg

                 McNemar's Test
           ───────────────────────────
           Statistic (S)    1.4066
           DF                    1
           Pr > S           0.2356


        Effective Sample Size = 826
```

How many serves of vegetables do you usually eat per day or week? (analysis=serves per day)

Test

```
                Basic Statistical Measures

         Location                   Variability

     Mean     2.835697    Std Deviation          1.81717
     Median   2.000000    Variance               3.30210
     Mode     2.000000    Range                 14.00000
                          Interquartile Range    2.28571
```

Retest

```
                Basic Statistical Measures

         Location                   Variability

     Mean     2.665687    Std Deviation          1.69921
     Median   2.000000    Variance               2.88731
     Mode     2.000000    Range                 10.00000
                          Interquartile Range    2.57143
```

Difference (retest- test)

```
                Basic Statistical Measures

         Location                   Variability

     Mean    -0.17001     Std Deviation          1.82742
     Median   0.00000     Variance               3.33945
     Mode     0.00000     Range                 21.00000
                          Interquartile Range    1.71429


                  Quantiles (Definition 5)

                  Quantile       Estimate

                  100% Max       9.000000
                  99%            5.000000
                  95%            2.714286
                  90%            2.000000
                  75% Q3         0.714286
                  50% Median     0.000000
                  25% Q1        -1.000000
                  10%           -2.000000
                  5%            -3.000000
                  1%            -5.142857
                  0% Min       -12.000000


                  Tests for Location: Mu0=0

         Test          -Statistic-     -----p Value------

         Student's t   t   -2.6738    Pr > |t|    0.0076
         Sign          M    -34.5     Pr >= |M|   0.0047
         Signed Rank   S  -14943.5    Pr >= |S|   0.0002
```

Plot of difference versus mean values: Serves of vegetables per day
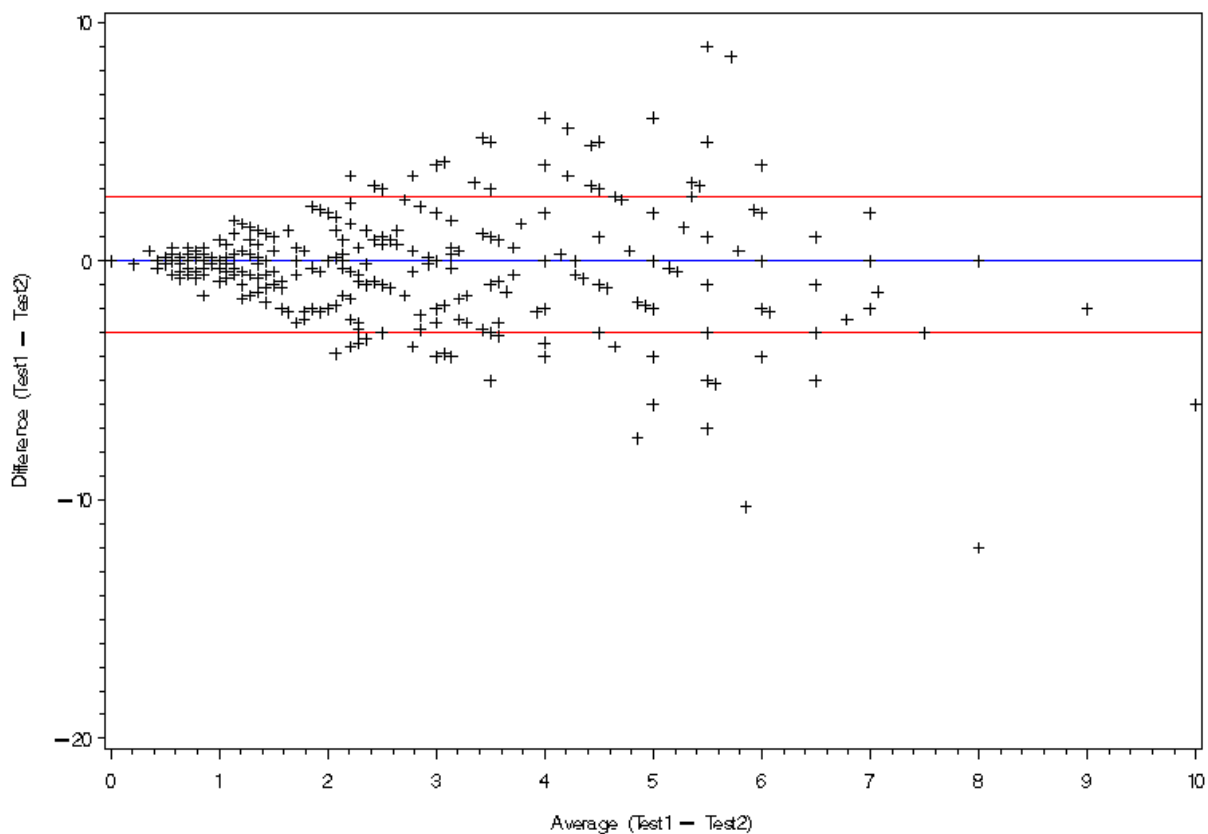
Derived Indicator: Adequate Fruit Intake

```
                      Frequencies - First Test

                                     Cumulative   Cumulative
     afruit          Frequency   Percent   Frequency   Percent
     ─────────────────────────────────────────────────────────
     Adequate            334     39.34        338       39.34
     Not Adequate        510     60.14        844       99.53
     Refused               1      0.12        845       99.65
     Don't Know            3      0.35        848      100.00

                      Frequencies - Repeat Test

                                     Cumulative   Cumulative
     r_afruit        Frequency   Percent   Frequency   Percent
     ─────────────────────────────────────────────────────────
     Adequate            326     38.44        326       38.44
     Not Adequate        519     61.20        845       99.65
     Don't Know            3      0.35        848      100.00



                   Table of afruit by r_afruit

          afruit          r_afruit

          Frequency   │
          Percent     │Adequate│Not Adeq│   Total
                      │        │uate    │
          ────────────┼────────┼────────┼
          Adequate    │   263  │    68  │    331
                      │ 31.27  │  8.09  │  39.36
          ────────────┼────────┼────────┼
          Not Adequate│    62  │   448  │    510
                      │  7.37  │ 53.27  │  60.64
          ────────────┼────────┼────────┼
          Total           325      516      841
                        38.64    61.36   100.00


          Statistics for Table of afruit by r_afruit

                     McNemar's Test
                ─────────────────────────
                Statistic (S)      0.2769
                DF                      1
                Pr > S             0.5987


             Effective Sample Size = 841
```

How many serves of fruit do you usually eat per day or week? (analysis=serves per day)

Test

```
                    Basic Statistical Measures

            Location                      Variability

        Mean      1.495499    Std Deviation            1.27039
        Median    1.000000    Variance                 1.61388
        Mode      1.000000    Range                   12.00000
                              Interquartile Range      1.28571
```

Retest

```
                    Basic Statistical Measures

            Location                      Variability

        Mean      1.445048    Std Deviation            1.24518
        Median    1.000000    Variance                 1.55048
        Mode      1.000000    Range                   15.00000
                              Interquartile Range      1.42857
```

Difference (retest – test)

```
                    Basic Statistical Measures

            Location                      Variability

        Mean     -0.05045     Std Deviation            0.97960
        Median    0.00000     Variance                 0.95962
        Mode      0.00000     Range                   21.00000
                              Interquartile Range      0.14286


                       Quantiles (Definition 5)

                       Quantile        Estimate

                       100% Max       10.000000
                       99%             2.000000
                       95%             1.000000
                       90%             1.000000
                       75% Q3          0.000000
                       50% Median      0.000000
                       25% Q1         -0.142857
                       10%            -1.000000
                       5%             -1.000000
                       1%             -3.000000
                       0% Min        -11.000000


                     Tests for Location: Mu0=0

          Test              -Statistic-     -----p Value------

          Student's t    t  -1.49352     Pr > |t|    0.1357
          Sign           M     -16.5     Pr >= |M|   0.1214
          Signed Rank    S     -2329     Pr >= |S|   0.3598
```

Plot of difference versus mean values: Serves of fruit per day
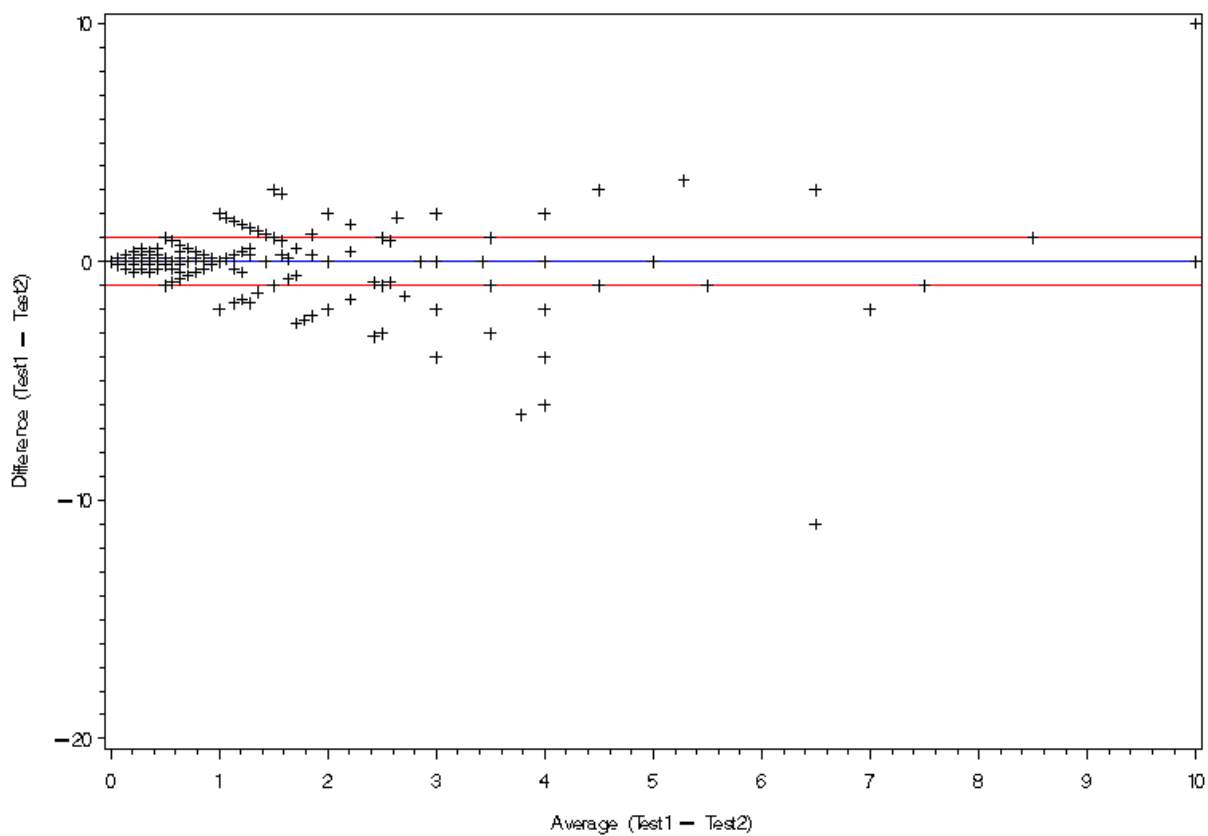
In the last 4 weeks how often did you avoid being in the sun between 11am and 4pm: would you say always, often, sometimes, rarely or never?

Frequencies - First Test

Avoidance of sun between 11am and 4pm in last 4 weeks

SPSV7	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Always	114	13.44	114	13.44
Often	171	20.16	285	33.61
Sometimes	122	14.39	407	47.99
Rarely	111	13.09	518	61.08
Not in the last 4 weeks	323	38.09	841	99.17
Refused	2	0.24	843	99.41
Don't know	5	0.59	848	100.00

Frequencies - Repeat Test

Avoidance of sun between 11am and 4pm in last 4 weeks

R_SPSV7	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Always	128	15.09	128	15.09
Often	148	17.45	276	32.55
Sometimes	126	14.86	402	47.41
Rarely	85	10.02	487	57.43
Not in the last 4 weeks	354	41.75	841	99.17
Don't know	7	0.83	848	100.00

Table of SPSV7 by R_SPSV7

SPSV7(SPSV7 : Avoidance of sun between 11am and 4pm in last 4 weeks)
R_SPSV7(SPSV7_X : Avoidance of sun between 11am and 4pm in last 4 weeks)

Frequency Percent	Always	Often	Sometimes	Rarely	Not in the last 4 weeks	Total
Always	53	26	6	4	22	111
	6.35	3.12	0.72	0.48	2.64	13.31
Often	32	68	30	12	28	170
	3.84	8.15	3.60	1.44	3.36	20.38
Sometimes	9	26	39	10	36	120
	1.08	3.12	4.68	1.20	4.32	14.39
Rarely	13	16	20	23	38	110
	1.56	1.92	2.40	2.76	4.56	13.19
Not in the last 4 weeks	20	9	29	36	229	323
	2.40	1.08	3.48	4.32	27.46	38.73

```
 ───────────────┼──────┼──────┼──────┼──────┼──────┼
 Total           127    145    124     85    353    834
                15.23  17.39  14.87  10.19  42.33 100.00


              Statistics for Table of SPSV7 by R_SPSV7

                      Test of Symmetry
                ─────────────────────────────
                Statistic (S)    20.8358
                DF                     10
                Pr > S            0.0223


                   Sample Size = 834
```

In the last 4 weeks how often did you wear sunglasses with uv (ultra violet) protection when in the sun: would you say always, often, sometimes, rarely or never?

Frequencies - First Test

SPSV8 : How often wear sunglasses in last 4 weeks

SPSV8	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Always	398	46.93	398	46.93
Often	117	13.80	515	60.73
Sometimes	71	8.37	586	69.10
Rarely	45	5.31	631	74.41
Not in the last 4 weeks	212	25.00	843	99.41
Don't know	5	0.59	848	100.00

Frequencies - Repeat Test

SPSV8_X : How often wear sunglasses in last 4 weeks

R_SPSV8	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Always	391	46.11	391	46.11
Often	101	11.91	492	58.02
Sometimes	85	10.02	577	68.04
Rarely	45	5.31	622	73.35
Not in the last 4 weeks	222	26.18	844	99.53
Don't know	4	0.47	848	100.00

Table of SPSV8 by R_SPSV8

SPSV8(SPSV8 : How often wear sunglasses in last 4 weeks)
R_SPSV8(SPSV8_X : How often wear sunglasses in last 4 weeks)

Frequency Percent	Always	Often	Sometimes	Rarely	Not in the last 4 weeks	Total
Always	333 39.60	37 4.40	11 1.31	4 0.48	12 1.43	397 47.21
Often	39 4.64	52 6.18	18 2.14	6 0.71	2 0.24	117 13.91
Sometimes	6 0.71	9 1.07	39 4.64	8 0.95	9 1.07	71 8.44
Rarely	2 0.24	1 0.12	10 1.19	17 2.02	15 1.78	45 5.35
Not in the last 4 weeks	10 1.19	2 0.24	5 0.59	10 1.19	184 21.88	211 25.09

```
─────────────┼─────────┼─────────┼─────────┼─────────┼─────────┼
Total              390       101        83        45       222      841
                 46.37     12.01      9.87      5.35     26.40   100.00


             Statistics for Table of SPSV8 by R_SPSV8

                    Test of Symmetry
                 ───────────────────────────
                 Statistic (S)     11.3082
                 DF                      10
                 Pr > S             0.3340

                   Sample Size = 841
```

In the last 4 weeks, when you were out in the sun for more than 15 minutes, how often did you wear a broad brimmed hat or cap with a back flap? Would you say always, often, sometimes, rarely or not in the last 4 weeks?

```
                    Frequencies - First Test

                  SPSS2 : Hat wearing last summer

                                                Cumulative    Cumulative
         SPSS2                Frequency    Percent   Frequency     Percent
         ────────────────────────────────────────────────────────────────
         Always                     229     27.00         229       27.00
         Often                       92     10.85         321       37.85
         Sometimes                   78      9.20         399       47.05
         Rarely                      54      6.37         453       53.42
         Not in the last 4 weeks    393     46.34         846       99.76
         Don't know                   2      0.24         848      100.00


                    Frequencies - Repeat Test

                 SPSS2_X : Hat wearing last summer

                                                Cumulative    Cumulative
         R_SPSS2              Frequency    Percent   Frequency     Percent
         ────────────────────────────────────────────────────────────────
         Always                     211     24.88         211       24.88
         Often                       79      9.32         290       34.20
         Sometimes                   82      9.67         372       43.87
         Rarely                      64      7.55         436       51.42
         Not in the last 4 weeks    410     48.35         846       99.76
         Don't know                   2      0.24         848      100.00



                    Table of SPSS2 by R_SPSS2

     SPSS2(SPSS2 : Hat wearing last summer)
                  R_SPSS2(SPSS2_X : Hat wearing last summer)
      Frequency  │
      Percent    │Always │Often  │Sometime│Rarely │Not in t│ Total
                 │       │       │s       │       │he last │
                 │       │       │        │       │4 weeks │
      ───────────┼───────┼───────┼────────┼───────┼────────┼───────
      Always     │   172 │    23 │     14 │     9 │     11 │   229
                 │ 20.38 │  2.73 │   1.66 │  1.07 │   1.30 │ 27.13
      ───────────┼───────┼───────┼────────┼───────┼────────┼───────
      Often      │    25 │    35 │     16 │     6 │     10 │    92
                 │  2.96 │  4.15 │   1.90 │  0.71 │   1.18 │ 10.90
      ───────────┼───────┼───────┼────────┼───────┼────────┼───────
      Sometimes  │     6 │    12 │     31 │     9 │     20 │    78
                 │  0.71 │  1.42 │   3.67 │  1.07 │   2.37 │  9.24
      ───────────┼───────┼───────┼────────┼───────┼────────┼───────
      Rarely     │     0 │     2 │      7 │    20 │     25 │    54
                 │  0.00 │  0.24 │   0.83 │  2.37 │   2.96 │  6.40
      ───────────┼───────┼───────┼────────┼───────┼────────┼───────
      Not in the last │ 8 │     7 │     14 │    20 │    342 │   391
      4 weeks    │  0.95 │  0.83 │   1.66 │  2.37 │  40.52 │ 46.33
      ───────────┼───────┼───────┼────────┼───────┼────────┼───────
      Total          211 │    79 │     82 │    64 │    408 │   844
                   25.00 │  9.36 │   9.72 │  7.58 │  48.34 │100.00
```

```
               Statistics for Table of SPSS2 by R_SPSS2

                          Test of Symmetry
                     ─────────────────────────
                     Statistic (S)    17.7222
                     DF                     10
                     Pr > S            0.0598

                        Sample Size = 844
```

In the last 4 weeks how often did you wear protective clothing, including a hat, when in the sun: would you say always, often, sometimes, rarely or never?

```
                         Frequencies - First Test


            SPSV9 : Wore sun protective clothing in last 4 weeks


                                                 Cumulative    Cumulative
            SPSV9                Frequency   Percent   Frequency    Percent
            ─────────────────────────────────────────────────────────────
            Always                   253     29.83        253       29.83
            Often                    119     14.03        372       43.87
            Sometimes                 98     11.56        470       55.42
            Rarely                    79      9.32        549       64.74
            Not in the last 4 weeks  287     33.84        836       98.58
            Don't know                12      1.42        848      100.00


                        Frequencies - Repeat Test


                          The FREQ Procedure


          SPSV9_X : Wore sun protective clothing in last 4 weeks


                                                 Cumulative    Cumulative
            R_SPSV9              Frequency   Percent   Frequency    Percent
            ─────────────────────────────────────────────────────────────
            Always                   250     29.48        250       29.48
            Often                    119     14.03        369       43.51
            Sometimes                114     13.44        483       56.96
            Rarely                    62      7.31        545       64.27
            Not in the last 4 weeks  286     33.73        831       98.00
            Don't know                17      2.00        848      100.00



                     Table of SPSV9 by R_SPSV9

     SPSV9(SPSV9 : Wore sun protective clothing in last 4 weeks)
              R_SPSV9(SPSV9_X : Wore sun protective clothing in last 4
                      weeks)
```

Frequency Percent	Always	Often	Sometimes	Rarely	Not in the last 4 weeks	Total
Always	167 20.37	29 3.54	23 2.80	3 0.37	29 3.54	251 30.61
Often	30 3.66	54 6.59	16 1.95	6 0.73	12 1.46	118 14.39
Sometimes	14 1.71	19 2.32	34 4.15	6 0.73	24 2.93	97 11.83
Rarely	6 0.73	4 0.49	19 2.32	18 2.20	30 3.66	77 9.39
Not in the last	32	13	21	28	183	277

```
4 weeks                 3.90     1.59     2.56     3.41     22.32     33.78
        ─────────────────────────────────────────────────────────────
Total                    249      119      113       61       278       820
                       30.37    14.51    13.78     7.44     33.90    100.00


                Statistics for Table of SPSV9 by R_SPSV9

                        Test of Symmetry
                ─────────────────────────────

                Statistic (S)     11.0798
                DF                     10
                Pr > S             0.3513

                    Sample Size = 820
```

In the last 4 weeks how often did you use sunscreen: would you say always, often, sometimes, rarely or never?

```
                    Frequencies - First Test


            SPSV10 : Use of sun screen in last 4 weeks


                                            Cumulative   Cumulative
            SPSV10          Frequency   Percent   Frequency    Percent
         ───────────────────────────────────────────────────────────────
            Always              146      17.22        146       17.22
            Often                63       7.43        209       24.65
            Sometimes            76       8.96        285       33.61
            Rarely               69       8.14        354       41.75
            Not in the last 4 weeks  494  58.25       848      100.00


                    Frequencies - Repeat Test


            SPSV10_X : Use of sun screen in last 4 weeks


                                            Cumulative   Cumulative
            R_SPSV10        Frequency   Percent   Frequency    Percent
         ───────────────────────────────────────────────────────────────
            Always              148      17.45        148       17.45
            Often                59       6.96        207       24.41
            Sometimes            68       8.02        275       32.43
            Rarely               70       8.25        345       40.68
            Not in the last 4 weeks  503  59.32       848      100.00



                    Table of SPSV10 by R_SPSV10


      SPSV10(SPSV10 : Use of sun screen in last 4 weeks)
                    R_SPSV10(SPSV10_X : Use of sun screen in last 4 weeks)
```

Frequency Percent	Always	Often	Sometimes	Rarely	Not in the last 4 weeks	Total
Always	109 12.85	19 2.24	9 1.06	3 0.35	6 0.71	146 17.22
Often	16 1.89	20 2.36	15 1.77	5 0.59	7 0.83	63 7.43
Sometimes	7 0.83	11 1.30	22 2.59	17 2.00	19 2.24	76 8.96
Rarely	2 0.24	4 0.47	13 1.53	15 1.77	35 4.13	69 8.14
Not in the last 4 weeks	14 1.65	5 0.59	9 1.06	30 3.54	436 51.42	494 58.25
Total	148 17.45	59 6.96	68 8.02	70 8.25	503 59.32	848 100.00

```
                 Statistics for Table of SPSV10 by R_SPSV10
```

```
                 Test of Symmetry
              ─────────────────────

Statistic (S)    9.4563
DF                   10
Pr > S           0.4894


           Sample Size = 848
```

Do you have smoke detectors in your home?

```
                    Frequencies - First Test

                INJ17 : Smoke detectors in home


                                          Cumulative   Cumulative
        INJ17        Frequency    Percent   Frequency     Percent
        ──────────────────────────────────────────────────────────
        Yes                649      76.53         649       76.53
        No                 199      23.47         848      100.00

                    Frequencies - Repeat Test

               INJ17_X : Smoke detectors in home

                                          Cumulative   Cumulative
        R_INJ17      Frequency    Percent   Frequency     Percent
        ──────────────────────────────────────────────────────────
        Yes                652      76.89         652       76.89
        No                 194      22.88         846       99.76
        Don't know           2       0.24         848      100.00


                   Table of INJ17 by R_INJ17

             INJ17(INJ17 : Smoke detectors in home)
                    R_INJ17(INJ17_X : Smoke detectors in home)
             Frequency │
             Percent   │Yes     │No      │ Total
                       │        │        │
             ──────────┼────────┼────────┼
             Yes       │    640 │      9 │   649
                       │  75.65 │   1.06 │ 76.71
             ──────────┼────────┼────────┼
             No        │     12 │    185 │   197
                       │   1.42 │  21.87 │ 23.29
             ──────────┼────────┼────────┼
             Total          652      194     846
                          77.07    22.93  100.00


          Statistics for Table of INJ17 by R_INJ17

                     McNemar's Test
                ───────────────────────
                Statistic (S)    0.4286
                DF                    1
                Pr > S           0.5127


                 Sample Size = 846
```

What type of smoke detector do you have in your home?

```
                    Frequencies - First Test

              INJ17b : Smoke detectors in home

                                              Cumulative    Cumulative
     INJ17b                  Frequency    Percent    Frequency    Percent
     ─────────────────────────────────────────────────────────────────
     Battery operated            398      62.38        398       62.38
     Wired into electrical system 144     22.57        542       84.95
     Don't know                   96      15.05        638      100.00

                    Frequencies - Repeat Test

              INJ17b_X : Smoke detectors in home


                                              Cumulative    Cumulative
     R_INJ17b                 Frequency    Percent    Frequency    Percent
     ─────────────────────────────────────────────────────────────────
     Battery operated            433      67.87        433       67.87
     Wired into electrical system 151     23.67        584       91.54
     Don't know                   54       8.46        638      100.00


                    Table of INJ17b by R_INJ17b

          INJ17b(INJ17b : Smoke detectors in home)
                        R_INJ17b(INJ17b_X : Smoke detectors in home)
          Frequency  │
          Percent    │Battery │Wired in│  Total
                     │operated│to elect│
                     │        │rical sy│
                     │        │stem    │
          ───────────┼────────┼────────┤
          Battery operated│ 376   │     8  │   384
                     │ 72.17  │  1.54  │  73.70
          ───────────┼────────┼────────┤
          Wired into elect│   8  │   129  │   137
          rical system    │ 1.54 │ 24.76  │  26.30
          ───────────┼────────┼────────┤
          Total           │ 384  │   137  │   521
                     │ 73.70  │ 26.30  │ 100.00


            Statistics for Table of INJ17b by R_INJ17b

                    McNemar's Test
               ─────────────────────────
               Statistic (S)    0.0000
               DF                    1
               Pr > S           1.0000


                 Sample Size = 521
```

When was the last time you or someone else deliberately tested all of the smoke detectors in your home?

```
                    Frequencies - First Test

             INJ18 : Last time smoke detectors tested


                                            Cumulative     Cumulative
      INJ18                 Frequency   Percent   Frequency      Percent
      ─────────────────────────────────────────────────────────────────
      Within the last month      213     33.28         213        33.28
      Within the past 6 months   201     31.41         414        64.69
      Within the past year        42      6.56         456        71.25
      One or more years ago       38      5.94         494        77.19
      Never                      107     16.72         601        93.91
      Don't know                  39      6.09         640       100.00


                    Frequencies - Repeat Test

            INJ18_X : Last time smoke detectors tested


                                            Cumulative     Cumulative
      R_INJ18               Frequency   Percent   Frequency      Percent
      ─────────────────────────────────────────────────────────────────
      Within the last month      226     35.31         226        35.31
      Within the past 6 months   210     32.81         436        68.13
      Within the past year        48      7.50         484        75.63
      One or more years ago       39      6.09         523        81.72
      Never                       85     13.28         608        95.00
      Don't know                  32      5.00         640       100.00


           Test-test-retest reliability: Use Weighted Kappa


                   Table of INJ18 by R_INJ18

 INJ18(INJ18 : Last time smoke detectors tested)
              R_INJ18(INJ18_X : Last time smoke detectors tested)
 Frequency  │
 Percent    │Within t│Within t│Within t│One or m│Never   │  Total
            │he last │he past │he past │ore year│        │
            │month   │6 months│year    │s ago   │        │
 ───────────┼────────┼────────┼────────┼────────┼────────┼────────
 Within the last │  159 │   42 │    2 │    1 │    8 │   212
 month           │27.27 │ 7.20 │ 0.34 │ 0.17 │ 1.37 │ 36.36
 ───────────┼────────┼────────┼────────┼────────┼────────┼────────
 Within the past │   38 │  138 │   14 │    4 │    3 │   197
 6 months        │ 6.52 │23.67 │ 2.40 │ 0.69 │ 0.51 │ 33.79
 ───────────┼────────┼────────┼────────┼────────┼────────┼────────
 Within the past │    4 │   12 │   18 │    2 │    3 │    39
 year            │ 0.69 │ 2.06 │ 3.09 │ 0.34 │ 0.51 │  6.69
 ───────────┼────────┼────────┼────────┼────────┼────────┼────────
 One or more year│    3 │    2 │    6 │   18 │    7 │    36
 s ago           │ 0.51 │ 0.34 │ 1.03 │ 3.09 │ 1.20 │  6.17
 ───────────┼────────┼────────┼────────┼────────┼────────┼────────
 Never           │   18 │    7 │    6 │   12 │   56 │    99
                 │ 3.09 │ 1.20 │ 1.03 │ 2.06 │ 9.61 │ 16.98
 ───────────┼────────┼────────┼────────┼────────┼────────┼────────
 Total            │  222 │  201 │   46 │   37 │   77 │   583
```

```
                 38.08    34.48     7.89     6.35    13.21   100.00


                Statistics for Table of INJ18 by R_INJ18

                          Test of Symmetry
                   ────────────────────────────
                   Statistic (S)    12.4491
                   DF                     10
                   Pr > S             0.2561

                          Sample Size = 583
```

Do you have a first aid kit?

```
                    Frequencies - First Test

              INJ35 : Have a first aid kit

                                        Cumulative   Cumulative
        INJ35         Frequency    Percent   Frequency     Percent
        ─────────────────────────────────────────────────────────
        Yes                 568      66.98         568       66.98
        No                  276      32.55         844       99.53
        Don't know            4       0.47         848      100.00

                    Frequencies - Repeat Test

              INJ35_X : Have a first aid kit


                                        Cumulative   Cumulative
        R_INJ35       Frequency    Percent   Frequency     Percent
        ─────────────────────────────────────────────────────────
        Yes                 584      68.87         584       68.87
        No                  263      31.01         847       99.88
        Don't know            1       0.12         848      100.00


                   Table of INJ35 by R_INJ35

        INJ35(INJ35 : Have a first aid kit)
                   R_INJ35(INJ35_X : Have a first aid kit)
        Frequency │
        Percent   │Yes     │No      │  Total
                  │        │        │
        ──────────┼────────┼────────┤
        Yes       │    531 │     37 │    568
                  │  62.91 │   4.38 │  67.30
        ──────────┼────────┼────────┤
        No        │     51 │    225 │    276
                  │   6.04 │  26.66 │  32.70
        ──────────┼────────┼────────┤
        Total          582      262      844
                     68.96    31.04   100.00


        Statistics for Table of INJ35 by R_INJ35

                   McNemar's Test
             ─────────────────────────────
             Statistic (S)    2.2273
             DF                    1
             Pr > S           0.1356


              Sample Size = 844
```

Do you have supplies of bandages, Band-Aids, antiseptic or other first aid equipment in your home?

```
                    Frequencies - First Test

            INJ36 : First aid supplies in home

                                       Cumulative   Cumulative
         INJ36       Frequency   Percent   Frequency     Percent
        ─────────────────────────────────────────────────
         Yes              210     92.51         210       92.51
         No                17      7.49         227      100.00

                    Frequencies - Repeat Test

            INJ36_X : First aid supplies in home

                                       Cumulative   Cumulative
         R_INJ36     Frequency   Percent   Frequency     Percent
        ─────────────────────────────────────────────────
         Yes              215     94.71         215       94.71
         No                12      5.29         227      100.00

                   Table of INJ36 by R_INJ36

           INJ36(INJ36 : First aid supplies in home)
                   R_INJ36(INJ36_X : First aid supplies in home)
           Frequency │
           Percent   │ Yes    │ No     │  Total
                     │        │        │
          ───────────┼────────┼────────┼
           Yes       │   209  │    1   │   210
                     │ 92.07  │  0.44  │  92.51
          ───────────┼────────┼────────┼
           No        │     6  │   11   │    17
                     │  2.64  │  4.85  │   7.49
          ───────────┼────────┼────────┼
           Total         215      12      227
                       94.71    5.29   100.00


           Statistics for Table of INJ36 by R_INJ36

                    McNemar's Test
                ─────────────────────────
                Statistic (S)    3.5714
                DF                    1
                Pr > S           0.0588


                    Sample Size = 227
```

In the last 12 months have you had a fall?

```
                        Frequencies - First Test

                   INJ22 : Fall in last 12 months


                                         Cumulative   Cumulative
            INJ22        Frequency   Percent   Frequency    Percent
            ────────────────────────────────────────────────────────
            Yes                 53     25.60          53      25.60
            No                 153     73.91         206      99.52
            Don't Know           1      0.48         207     100.00

                        Frequencies - Repeat Test

                  INJ22_X : Fall in last 12 months


                                         Cumulative   Cumulative
            R_INJ22      Frequency   Percent   Frequency    Percent
            ────────────────────────────────────────────────────────
            Yes                 59     28.50          59      28.50
            No                 148     71.50         207     100.00


                        Table of INJ22 by R_INJ22

              INJ22(INJ22 : Fall in last 12 months)
                      R_INJ22(INJ22_X : Fall in last 12 months)
              Frequency  │
              Percent    │Yes     │No      │ Total
                         │        │        │

              ───────────┼────────┼────────┼
              Yes        │     48 │      5 │     53
                         │  23.30 │   2.43 │  25.73
              ───────────┼────────┼────────┼
              No         │     11 │    142 │    153
                         │   5.34 │  68.93 │  74.27
              ───────────┼────────┼────────┼
              Total           59       147     206
                           28.64     71.36  100.00


              Statistics for Table of INJ22 by R_INJ22

                      McNemar's Test
                  ────────────────────────
                  Statistic (S)    2.2500
                  DF                    1
                  Pr > S           0.1336


                    Sample Size = 206
```

How many times did you fall in the last 12 months?

```
                    Frequencies - First Test


   INJ23 : Number of accidental falls in the last 12 months


                                              Cumulative   Cumulative
      INJ23              Frequency    Percent   Frequency    Percent
   ─────────────────────────────────────────────────────────────────
   Once                       23      47.92          23      47.92
   Twice                      18      37.50          41      85.42
   Three times or more         6      12.50          47      97.92
   Don't Know                  1       2.08          48     100.00


                    Frequencies - Repeat Test


   INJ23_X : Number of accidental falls in the last 12 months


                                              Cumulative   Cumulative
      R_INJ23            Frequency    Percent   Frequency    Percent
   ─────────────────────────────────────────────────────────────────
   Once                       23      47.92          23      47.92
   Twice                      17      35.42          40      83.33
   Three times or more         8      16.67          48     100.00



                   Table of INJ23 by R_INJ23


     INJ23(INJ23 : Number of accidental falls in the last 12 months)
               R_INJ23(INJ23_X : Number of accidental falls in
                       the last 12 months)


    Frequency       │
    Percent         │Once   │Twice  │Three ti│ Total
                    │       │       │mes or m│
                    │       │       │ore     │
   ─────────────────┼───────┼───────┼────────┼
   Once             │    20 │     3 │      0 │    23
                    │ 42.55 │  6.38 │   0.00 │ 48.94
   ─────────────────┼───────┼───────┼────────┼
   Twice            │     1 │    13 │      4 │    18
                    │  2.13 │ 27.66 │   8.51 │ 38.30
   ─────────────────┼───────┼───────┼────────┼
   Three times or m │     2 │     1 │      3 │     6
   ore              │  4.26 │  2.13 │   6.38 │ 12.77
   ─────────────────┼───────┼───────┼────────┼
   Total                 23      17        7      47
                      48.94   36.17    14.89  100.00


         Statistics for Table of INJ23 by R_INJ23


                 Test of Symmetry
           ──────────────────────────
           Statistic (S)     4.8000
           DF                     3
           Pr > S            0.1870
              Sample Size = 47
```

In the last 12 months have you had a fall which required medical treatment for injuries?

```
                     Frequencies - First Test

   INJ24 : Fall which required medical attention in last 12 months


                                        Cumulative    Cumulative
          INJ24       Frequency   Percent   Frequency    Percent
          ──────────────────────────────────────────────────────
          Yes              18      37.50        18       37.50
          No               30      62.50        48      100.00

                    Frequencies - Repeat Test

  INJ24_X : Fall which required medical attention in last 12 months


                             Cumulative   Cumulative
          R_INJ24    Frequency   Percent   Frequency    Percent
          ──────────────────────────────────────────────────────
          Yes              21      43.75        21       43.75
          No               27      56.25        48      100.00

                   Table of INJ24 by R_INJ24


          INJ24(INJ24 : Fall which required medical attention in last
                12 months)
                    R_INJ24(INJ24_X : Fall which required medical
                            attention in last 12 months)

          Frequency  │
          Percent    │Yes     │No      │ Total

          ───────────┼────────┼────────┼────────
          Yes        │     17 │      1 │     18
                     │  35.42 │   2.08 │  37.50
          ───────────┼────────┼────────┼────────
          No         │      4 │     26 │     30
                     │   8.33 │  54.17 │  62.50
          ───────────┼────────┼────────┼────────
          Total           21       27       48
                       43.75    56.25   100.00


      Statistics for Table of INJ24 by R_INJ24


                  McNemar's Test
              ─────────────────────────
              Statistic (S)    1.8000
              DF                    1
              Pr > S           0.1797

                 Sample Size = 48
```

Were you ADMITTED to hospital as a result of any of your falls in the last 12 months?

```
                    Frequencies - First Test

        INJ25 : Admitted to hospital for most recent fall


                                        Cumulative    Cumulative
         INJ25      Frequency   Percent   Frequency      Percent
        ─────────────────────────────────────────────────────────
         Yes              8     47.06           8        47.06
         No               9     52.94          17       100.00

                    Frequencies - Repeat Test

       INJ25_X : Admitted to hospital for most recent fall


                                        Cumulative    Cumulative
        R_INJ25     Frequency   Percent   Frequency      Percent
        ─────────────────────────────────────────────────────────
         Yes              6     35.29           6        35.29
         No              11     64.71          17       100.00

                    Table of INJ25 by R_INJ25


          INJ25(INJ25 : Admitted to hospital for most recent fall)
                   R_INJ25(INJ25_X : Admitted to hospital for most
                            recent fall)

          Frequency  │
          Percent    │Yes    │No     │Total
                     │       │       │
                     │       │       │
          ───────────┼───────┼───────┼────────
          Yes        │    6  │    2  │    8
                     │35.29  │11.76  │47.06
          ───────────┼───────┼───────┼────────
          No         │    0  │    9  │    9
                     │ 0.00  │52.94  │52.94
          ───────────┼───────┼───────┼────────
          Total           6      11      17
                      35.29   64.71  100.00


           Statistics for Table of INJ25 by R_INJ25

                     McNemar's Test
                 ─────────────────────────
                 Statistic (S)   2.0000
                 DF                   1
                 Pr > S          0.1573


                 Sample Size = 17
```

Do you currently undertake any form of exercise?

```
                    Frequencies - First Test

                 INJ26 : Any exercise currently

                                       Cumulative    Cumulative
    INJ26         Frequency    Percent   Frequency      Percent
    ─────────────────────────────────────────────────────────────
    Yes                  58      76.32          58        76.32
    No                   18      23.68          76       100.00

                   Frequencies - Repeat Test

               INJ26_X : Any exercise currently

                                       Cumulative    Cumulative
    R_INJ26       Frequency    Percent   Frequency      Percent
    ─────────────────────────────────────────────────────────────
    Yes                  60      78.95          60        78.95
    No                   16      21.05          76       100.00

                 Table of INJ26 by R_INJ26

         INJ26(INJ26 : Any exercise currently)
                  R_INJ26(INJ26_X : Any exercise currently)
         Frequency │
         Percent   │Yes     │No     │ Total

         ──────────┼────────┼───────┼
         Yes       │     54 │     4 │     58
                   │  71.05 │  5.26 │  76.32
         ──────────┼────────┼───────┼
         No        │      6 │    12 │     18
                   │   7.89 │ 15.79 │  23.68
         ──────────┼────────┼───────┼
         Total           60      16      76
                      78.95   21.05  100.00


        Statistics for Table of INJ26 by R_INJ26

                    McNemar's Test
              ──────────────────────────
              Statistic (S)    0.4000
              DF                    1
              Pr > S           0.5271


                Sample Size = 76
```

Do you usually undertake any form of exercise?

```
                    Frequencies - First Test

                INJ26b : Any exercise usually


                                         Cumulative    Cumulative
INJ26b          Frequency     Percent     Frequency      Percent
─────────────────────────────────────────────────────────────────
Yes                    54       73.97            54        73.97
No                     19       26.03            73       100.00

                    Frequencies - Repeat Test

               INJ26b_X : Any exercise usually


                                         Cumulative    Cumulative
R_INJ26b        Frequency     Percent     Frequency      Percent
─────────────────────────────────────────────────────────────────
Yes                    56       76.71            56        76.71
No                     17       23.29            73       100.00



             Table of INJ26b by R_INJ26b

       INJ26b(INJ26b : Any exercise usually)
               R_INJ26b(INJ26b_X : Any exercise usually)
       Frequency  |
       Percent    | Yes    | No     | Total


       ─────────────────────────────────────
       Yes            50        4         54
                   68.49     5.48      73.97
       ─────────────────────────────────────
       No              6       13         19
                    8.22    17.81      26.03
       ─────────────────────────────────────
       Total          56       17         73
                   76.71    23.29     100.00


       Statistics for Table of INJ26b by R_INJ26b

                 McNemar's Test
             ─────────────────────────
             Statistic (S)    0.4000
             DF                    1
             Pr > S           0.5271


                Sample Size = 73
```

What type of exercise do you do? Walking

```
                    Frequencies - First Test

            INJ27_1 : Type of exercise : Walking


                                        Cumulative   Cumulative
          INJ27_1    Frequency   Percent   Frequency    Percent
          ─────────────────────────────────────────────────────
          No              38     25.85          38      25.85
          Yes            109     74.15         147     100.00

                    Frequencies - Repeat Test

            INJ27_X_1 : Type of exercise : Walking


                                        Cumulative   Cumulative
          R_INJ27_1   Frequency   Percent   Frequency    Percent
          ─────────────────────────────────────────────────────
          No              43     29.25          43      29.25
          Yes            104     70.75         147     100.00


                Table of INJ27_1 by R_INJ27_1


          INJ27_1(INJ27_1 : Type of exercise : Walking)
                   R_INJ27_1(INJ27_X_1 : Type of exercise : Walking)

          Frequency │
          Percent   │ No     │ Yes    │  Total

          ──────────┼────────┼────────┼
          No        │    29  │     9  │    38
                    │ 19.73  │  6.12  │ 25.85
          ──────────┼────────┼────────┼
          Yes       │    14  │    95  │   109
                    │  9.52  │ 64.63  │ 74.15
          ──────────┼────────┼────────┼
          Total          43      104     147
                      29.25    70.75  100.00


       Statistics for Table of INJ27_1 by R_INJ27_1

                    McNemar's Test
              ─────────────────────────
              Statistic (S)    1.0870
              DF                    1
              Pr > S           0.2971


                Sample Size = 147
```

What type of exercise do you do? Exercises at home

```
                    Frequencies - First Test

        INJ27_2 : Type of exercise : Exercises at home

                                        Cumulative   Cumulative
         INJ27_2     Frequency    Percent   Frequency    Percent
        ─────────────────────────────────────────────────────────
         No              127      86.39        127       86.39
         Yes              20      13.61        147      100.00

                    Frequencies - Repeat Test

        INJ27_X_2 : Type of exercise : Exercises at home

                                        Cumulative   Cumulative
         R_INJ27_2   Frequency    Percent   Frequency    Percent
        ─────────────────────────────────────────────────────────
         No              124      84.35        124       84.35
         Yes              23      15.65        147      100.00


                Table of INJ27_2 by R_INJ27_2

        INJ27_2(INJ27_2 : Type of exercise : Exercises at home)
                R_INJ27_2(INJ27_X_2 : Type of exercise :
                          Exercises at home)

        Frequency │
        Percent   │No      │Yes     │ Total
                  │        │        │
        ──────────┼────────┼────────┤
        No        │   120  │     7  │   127
                  │ 81.63  │  4.76  │ 86.39
        ──────────┼────────┼────────┤
        Yes       │     4  │    16  │    20
                  │  2.72  │ 10.88  │ 13.61
        ──────────┼────────┼────────┤
        Total         124       23      147
                     84.35    15.65   100.00


        Statistics for Table of INJ27_2 by R_INJ27_2

                    McNemar's Test
               ─────────────────────────
                Statistic (S)    0.8182
                DF                    1
                Pr > S           0.3657

                  Sample Size = 147
```

What type of exercise do you do? Exercises in a group

```
                    Frequencies - First Test

               INJ27_3 : Type of exercise : Exercises in a group

                                    Cumulative   Cumulative
        INJ27_3     Frequency     Percent    Frequency     Percent
        ─────────────────────────────────────────────────────────────
        No              137        93.20         137        93.20
        Yes              10         6.80         147       100.00

                    Frequencies - Repeat Test

              INJ27_X_3 : Type of exercise : Exercises in a group

                                    Cumulative   Cumulative
        R_INJ27_3    Frequency     Percent    Frequency     Percent
        ─────────────────────────────────────────────────────────────
        No              141        95.92         141        95.92
        Yes               6         4.08         147       100.00

               Table of INJ27_3 by R_INJ27_3

           INJ27_3(INJ27_3 : Type of exercise : Exercises in a group)
                  R_INJ27_3(INJ27_X_3 : Type of exercise :
                            Exercises in a group)

        Frequency │
        Percent   │No      │Yes     │ Total

        ──────────┼────────┼────────┤
        No        │    136 │      1 │    137
                  │  92.52 │   0.68 │  93.20
        ──────────┼────────┼────────┤
        Yes       │      5 │      5 │     10
                  │   3.40 │   3.40 │   6.80
        ──────────┼────────┼────────┤
        Total          141        6     147
                     95.92     4.08  100.00


         Statistics for Table of INJ27_3 by R_INJ27_3

                    McNemar's Test
                ──────────────────────
                Statistic (S)    2.6667
                DF                    1
                Pr > S           0.1025


                   Sample Size = 147
```

What type of exercise do you do? Swimming

```
                         Frequencies - First Test

                   INJ27_4 : Type of exercise : Swimming


                                          Cumulative    Cumulative
          INJ27_4     Frequency    Percent   Frequency      Percent
          ──────────────────────────────────────────────────────────
          No               140      95.24         140        95.24
          Yes                7       4.76         147       100.00

                        Frequencies - Repeat Test

                   INJ27_X_4 : Type of exercise : Swimming

                                          Cumulative    Cumulative
          R_INJ27_4   Frequency    Percent   Frequency      Percent
          ──────────────────────────────────────────────────────────
          No               141      95.92         141        95.92
          Yes                6       4.08         147       100.00

                  Table of INJ27_4 by R_INJ27_4

             INJ27_4(INJ27_4 : Type of exercise : Swimming)
                    R_INJ27_4(INJ27_X_4 : Type of exercise :
                              Swimming)

          Frequency │
          Percent   │No      │Yes     │  Total
                    ┼────────┼────────┤
                    │        │        │
          No        │   139  │     1  │    140
                    │ 94.56  │  0.68  │  95.24
                    ┼────────┼────────┤
          Yes       │     2  │     5  │      7
                    │  1.36  │  3.40  │   4.76
                    ┼────────┼────────┤
          Total         141        6      147
                        95.92     4.08   100.00


          Statistics for Table of INJ27_4 by R_INJ27_4

                      McNemar's Test
                   ─────────────────────
                   Statistic (S)    0.3333
                   DF                    1
                   Pr > S           0.5637


                   Sample Size = 147
```

What type of exercise do you do? Dancing

```
                        Frequencies - First Test

                   INJ27_5 : Type of exercise : Dancing

                                          Cumulative    Cumulative
         INJ27_5     Frequency    Percent   Frequency     Percent
         _____

         No               142      96.60         142       96.60
         Yes                5       3.40         147      100.00

                        Frequencies - Repeat Test

                   INJ27_X_5 : Type of exercise : Dancing

                                          Cumulative    Cumulative
         R_INJ27_5   Frequency    Percent   Frequency     Percent
         _____

         No               142      96.60         142       96.60
         Yes                5       3.40         147      100.00


               Table of INJ27_5 by R_INJ27_5

            INJ27_5(INJ27_5 : Type of exercise : Dancing)
                    R_INJ27_5(INJ27_X_5 : Type of exercise : Dancing)

            Frequency │
            Percent   │No      │Yes     │ Total
                      │        │        │
            _____│_____│_____│
                      │        │        │
            No        │    141 │      1 │    142
                      │  95.92 │   0.68 │  96.60
            _____│_____│_____│
                      │        │        │
            Yes       │      1 │      4 │      5
                      │   0.68 │   2.72 │   3.40
            _____│_____│_____│
            Total         142        5      147
                        96.60     3.40   100.00


          Statistics for Table of INJ27_5 by R_INJ27_5

                      McNemar's Test
                  _____

                  Statistic (S)    0.0000
                  DF                    1
                  Pr > S           1.0000


                  Sample Size = 147
```

Convergent Validity: What type of milk do you usually have / consume? (A: B)

```
                        Frequencies - First Test

                       NUT9 : Type of milk have

                                           Cumulative   Cumulative
   NUT9                   Frequency   Percent   Frequency     Percent
   ─────────────────────────────────────────────────────────────────
   Whole milk                 130     46.10        130        46.10
   Low or reduced fat          97     34.40        227        80.50
   Skim                        36     12.77        263        93.26
   Soya milk - whole fat        3      1.06        266        94.33
   Soya milk - redcued fat      7      2.48        273        96.81
   Evaporated/sweetened condensed  1   0.35        274        97.16
   Other (specify)              8      2.84        282       100.00

                       Frequencies - Repeat Test

                   NUT9b_X : Type of milk consumed

                                           Cumulative   Cumulative
   R_NUT9                  Frequency   Percent   Frequency     Percent
   ─────────────────────────────────────────────────────────────────
   Whole milk                 133     47.16        133        47.16
   Low or reduced fat          97     34.40        230        81.56
   Skim                        36     12.77        266        94.33
   Soya milk - whole fat        3      1.06        269        95.39
   Soya milk - redcued fat      7      2.48        276        97.87
   Other (specify)              5      1.77        281        99.65
   Don't know                   1      0.35        282       100.00


                       Table of NUT9 by R_NUT9

     NUT9(NUT9 : Type of milk have)    R_NUT9(NUT9_X : Type of milk have)
```

Frequency Percent	Whole milk	Low or reduced fat	Skim	Soya milk - whole fat	Soya milk - redcued fat	Other (specify)	Total
Whole milk	127 45.20	1 0.36	0 0.00	1 0.36	0 0.00	0 0.00	129 45.91
Low or reduced fat	4 1.42	85 30.25	8 2.85	0 0.00	0 0.00	0 0.00	97 34.52
Skim	0 0.00	9 3.20	26 9.25	0 0.00	1 0.36	0 0.00	36 12.81
Soya milk - whole fat	0 0.00	0 0.00	1 0.36	2 0.71	0 0.00	0 0.00	3 1.07
Soya milk - redcued fat	0 0.00	0 0.00	1 0.36	0 0.00	6 2.14	0 0.00	7 2.49

	1	0	0	0	0	0	1
Evaporated/sweet ened condensed	0.36	0.00	0.00	0.00	0.00	0.00	0.36
Other (specify)	1	2	0	0	0	5	8
	0.36	0.71	0.00	0.00	0.00	1.78	2.85
Total	133	97	36	3	7	5	281
	47.33	34.52	12.81	1.07	2.49	1.78	100.00

Statistics for Table 1 of NUT9 by r_nut9
Test of Symmetry
───────────────────────

Statistic (S)   3.2000
DF   21
Pr > S   1.0000

Sample Size = 75

Convergent Validity: What type of milk do you usually consume/have? (B:A)

```
                      Frequencies - First Test

                   NUT9b : Type of milk consumed

                                                Cumulative   Cumulative
NUT9b                       Frequency   Percent  Frequency    Percent
─────────────────────────────────────────────────────────────────────
Whole milk                      130     46.59      130        46.59
Low or reduced fat               86     30.82      216        77.42
Skim                             47     16.85      263        94.27
Soya milk - whole fat             3      1.08      266        95.34
Soya milk - reduced fat           8      2.87      274        98.21
Evaporated/sweetened condensed    1      0.36      275        98.57
Other (specify)                   3      1.08      278        99.64
Don't know                        1      0.36      279       100.00

                     Frequencies - Repeat Test

                    NUT9_X : Type of milk have

                                                Cumulative   Cumulative
R_NUT9b                     Frequency   Percent  Frequency    Percent
─────────────────────────────────────────────────────────────────────
Whole milk                      125     44.80      125        44.80
Low or reduced fat               88     31.54      213        76.34
Skim                             50     17.92      263        94.27
Soya milk - whole fat             2      0.72      265        94.98
Soya milk - reduced fat           7      2.51      272        97.49
Other (specify)                   7      2.51      279       100.00


                      Table of NUT9b by R_NUT9b

   NUT9b(NUT9b : Type of milk consumed)    R_NUT9b(NUT9b_X : Type of milk consumed)
```

Frequency Percent	Whole milk	Low or reduced fat	Skim	Soya milk - whole fat	Soya milk - reduced fat	Other (specify)	Total
Whole milk	121 43.53	5 1.80	1 0.36	2 0.72	0 0.00	1 0.36	130 46.76
Low or reduced fat	1 0.36	75 26.98	8 2.88	0 0.00	0 0.00	2 0.72	86 30.94
Skim	0 0.00	6 2.16	41 14.75	0 0.00	0 0.00	0 0.00	47 16.91
Soya milk - whole fat	2 0.72	1 0.36	0 0.00	0 0.00	0 0.00	0 0.00	3 1.08
Soya milk - reduced fat	0 0.00	1 0.36	0 0.00	0 0.00	7 2.52	0 0.00	8 2.88

Evaporated/sweetened condensed	0	0	0	0	0	1	1
	0.00	0.00	0.00	0.00	0.00	0.36	0.36
Other (specify)	0	0	0	0	0	3	3
	0.00	0.00	0.00	0.00	0.00	1.08	1.08
Total	124	88	50	2	7	7	278
	44.60	31.65	17.99	0.72	2.52	2.52	100.00

Statistics for Table 1 of NUT9b by r_nut9b

Test of Symmetry
────────────────────────

Statistic (S)   3.2000
DF   21
Pr > S   1.0000

Sample Size = 106

Convergent Validity: Do you currently /usually undertake any form of exercise? (A:B)

```
                    Frequencies - First Test

                  INJ26 : Any exercise currently

                                          Cumulative    Cumulative
            INJ26        Frequency    Percent    Frequency     Percent
            ─────────────────────────────────────────────────────────
            Yes                 58      76.32           58       76.32
            No                  18      23.68           76      100.00


                    Frequencies - Repeat Test

                 INJ26b_X : Any exercise usually
                                          Cumulative    Cumulative
            R_INJ26      Frequency    Percent    Frequency     Percent
            ─────────────────────────────────────────────────────────
            Yes                 60      78.95           60       78.95
            No                  16      21.05           76      100.00


     Table of INJ26 by R_INJ26


                    INJ26(INJ26 : Any exercise currently)
                       R_INJ26(INJ26_X : Any exercise currently)
                  Frequency │
                  Percent   │ Yes     │ No       │  Total


                  ─────────────┼─────────┼──────────┼
                  Yes        │     54  │      4   │     58
                             │  71.05  │   5.26   │  76.32
                  ─────────────┼─────────┼──────────┼
                  No         │      6  │     12   │     18
                             │   7.89  │  15.79   │  23.68
                  ─────────────┼─────────┼──────────┼
                  Total           60        16         76
                             │  78.95     21.05    100.00


          Statistics for Table of INJ26 by r_inj26

                  McNemar's Test
                  ─────────────────────────
            Statistic (S)    2.0000
            DF                    1
            Pr > S           0.1573


                 Sample Size = 22
```

Convergent Validity: Do you usually/currently undertake any form of exercise? (B:A)

```
                    Frequencies - First Test

                 INJ26b : Any exercise usually

                                        Cumulative   Cumulative
    INJ26b        Frequency     Percent  Frequency    Percent
    _____

    Yes                  54       73.97         54      73.97
    No                   19       26.03         73     100.00


                   Frequencies - Repeat Test

                INJ26_X : Any exercise currently
                                        Cumulative   Cumulative
    R_INJ26b      Frequency     Percent  Frequency    Percent
    _____

    Yes                  56       76.71         56      76.71
    No                   17       23.29         73     100.00



                   Table of INJ26b by R_INJ26b

             INJ26b(INJ26b : Any exercise usually)
                       R_INJ26b(INJ26b_X : Any exercise usually)
             Frequency |
             Percent   | Yes     | No      |  Total

             _____|_____|_____|_____

             Yes       |      50 |       4 |     54
                       |   68.49 |    5.48 |  73.97

             _____|_____|_____|_____

             No        |       6 |      13 |     19
                       |    8.22 |   17.81 |  26.03

             _____|_____|_____|_____

             Total           56        17       73
                          76.71     23.29   100.00



         Statistics for Table of INJ26b by r_inj26b

                   McNemar's Test
             _____

             Statistic (S)    0.2000
             DF                    1
             Pr > S           0.6547



                 Sample Size = 36
```

Convergent Validity: Adequate physical activity, against 'How active are you?'

```
                          Frequencies

                    Adequate Physical Activity

                                        Cumulative    Cumulative
         physact      Frequency    Percent    Frequency       Percent
         ─────────────────────────────────────────────────────────────
         Adequate          1258      48.72         1258         48.72
         Inadequate        1324      51.28         2582        100.00

                          Frequencies

                      How active are you?

                                        Cumulative    Cumulative
         r_physact            Frequency    Percent    Frequency       Percent
         ─────────────────────────────────────────────────────────────
         Very active/Active       2151      83.31         2151         83.31
         Not active                422      16.34         2573         99.65
         Don't Know                  9       0.35         2582        100.00



            Table of Adequate Physical Activity by How active are you?

            physact(Adequate Physical Activity)
                      r_physact(How active are you?)

            Frequency │
            Percent   │Very act│Not acti│   Total
                      │ive/Acti│ve      │
                      │ve      │        │
            ──────────┼────────┼────────┼
            Adequate  │   1176 │     80 │    1256
                      │  45.71 │   3.11 │   48.81
            ──────────┼────────┼────────┼
            Inadequate│    975 │    342 │    1317
                      │  37.89 │  13.29 │   51.19
            ──────────┼────────┼────────┼
            Total         2151      422      2573
                         83.60    16.40    100.00


          Statistics for Table of physact by r_physact

                      McNemar's Test
               ─────────────────────────────
               Statistic (S)     759.2654
               DF                        1
               Pr > S               <.0001


                 Sample Size = 2573
```

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