



# DATA DICTIONARY: DERIVED VARIABLES & NOTES

Follow-up: Gen1\_26

Last update: 17/09/2018

Any questions? Please contact the Raine Study at [Raineadmin-sph@uwa.edu.au](mailto:Raineadmin-sph@uwa.edu.au)

## Contents

Depression, Anxiety and Stress Scale - 21 (DASS-21) .....	4
Source items: .....	4
Derived variables: .....	4
How the derived variables were calculated:.....	4
Generalised Anxiety Disorder 7-Item Scale (GAD-7).....	6
Source items: .....	6
Derived variables: .....	6
How the derived variables were calculated:.....	6
Patient Health Questionnaire (PHQ-9) .....	7
Source items: .....	7
Derived variables: .....	7
How the derived variables were calculated:.....	7
International Physical Activity Questionnaire (IPAQ) - SF.....	8
Source items: .....	8
Derived variables: .....	8
How the derived variables were calculated:.....	9
Örebro Musculoskeletal Pain Screening Questionnaire - Short Form (ÖMPSQ-SF) .....	11
Source items: .....	11
Derived variables: .....	11
How the derived variables were calculated:.....	11
Notes.....	11
Knee Injury and Osteoarthritis Outcome Score (KOOS) - Pain Subscale .....	12
Source items: .....	12
Derived variables: .....	12
How the derived variables were calculated:.....	12
Hip Dysfunction and Osteoarthritis Outcome Score (HOOS) - Pain Subscale.....	13
Source items: .....	13
Derived variables: .....	13
How the derived variables were calculated:.....	13
Prospective-Retrospective Memory Questionnaire (PRMQ).....	14
Source items: .....	14
Derived variables: .....	14

How the derived variables were calculated:.....	15
12-Item Short Form Health Survey (SF-12) Version 2.0.....	16
Source items: .....	16
Derived variables: .....	16
How the derived variables were calculated:.....	17
Restless Leg Syndrome.....	20
Source items: .....	20
Derived variables: .....	20
How the derived variables were calculated:.....	20
Functional Outcomes of Sleep Questionnaire - 10 Item (FOSQ-10) Short Form .....	21
Source items: .....	21
Derived variables: .....	21
How the derived variables were calculated:.....	21
Attention-Related Cognitive Errors Scale (ARCES).....	22
Source items: .....	22
Derived variables: .....	22
How the derived variables were calculated:.....	22
Pittsburgh Sleep Symptom Questionnaire - Insomnia (PSSQ_I) .....	23
Source items: .....	23
Derived variables: .....	23
How the derived variables were calculated:.....	24
Epsworth Sleepiness Scale (ESS) .....	26
Source items: .....	26
Derived variables: .....	26
How the derived variables were calculated:.....	26
Pittsburgh Sleep Quality Inventory (PSQI) .....	27
Source items: .....	27
Derived variables: .....	27
How the derived variables were calculated:.....	28
Morningness-Eveningness Questionnaire (MEQ) .....	30
Source items: .....	30
Derived variables: .....	30
How the derived variables were calculated:.....	30

Berlin Questionnaire .....	31
Source items: .....	31
Derived variables: .....	31
How the derived variables were calculated:.....	31
Sleep questionnaire data Generation 0 .....	32
Notes:.....	32

# Depression, Anxiety and Stress Scale - 21 (DASS-21)

## Source items:

Raine Variable Name	Description	Recoded into
G126_FL27	Hard to wind down	v1
G126_FL15	Dry mouth	v2
G126_FL13	No positive feelings	v3
G126_FL4	Short of breath / difficulty breathing	v4
G126_FL26	No initiative	v5
G126_FL10	Overreacting to situations	v6
G126_FL39	Experienced trembling	v7
G126_FL22	Using a lot of nervous energy	v8
G126_FL33	Worried might start to panic	v9
G126_FL12	Nothing to look forward to	v10
G126_FL40	Found self getting agitated	v11
G126_FL37	Finds it hard to relax	v12
G126_FL25	Feels blue	v13
G126_FL42	Can't tolerate interruptions	v14
G126_FL35	Felt close to panic	v15
G126_FL32	Not able to get enthusiastic	v16
G126_FL31	Feels worthless	v17
G126_FL21	Feels touchy	v18
G126_FL18	Aware of heartbeat	v19
G126_FL19	Scared for no reason	v20
G126_FL41	Felt life was meaningless	v21

## Derived variables:

G126_DEP_TOT	DASS Depression Subscale
G126_ANX_TOT	DASS Anxiety Subscale
G126_STR_TOT	DASS Stress Subscale
G126_DEP_CAT	DASS Depression 'Diagnosis'
G126_ANX_CAT	DASS Anxiety 'Diagnosis'
G126_STR_CAT	DASS Stress 'Diagnosis'

## How the derived variables were calculated:

DASS Depression Scale Score	$DEP\_TOT = \text{sum}(v3, v5, v10, v13, v16:17, v21) * 2$
DASS Anxiety Score	$ANX\_TOT = \text{sum}(v2, v4, v7, v9, v15, v19:20) * 2$

DASS Stress Scale score	STR_TOT = sum(v1, v6, v8, v11:12, v14, v18) * 2
DASS Depression 'Diagnosis'	G126_DEP_CAT  0-9 = Normal (= 1) 10-13 = Mild (= 2) 14-20 = Moderate (= 3) 21-27 = Severe (= 4) 28+ = Extremely severe (= 5)
DASS Anxiety 'Diagnosis'	G126_ANX_CAT  0-7 = Normal (= 1) 8-9 = Mild (= 2) 10-14 = Moderate (= 3) 15-19 = Severe (= 4) 20+ = Extremely severe (= 5)
DASS Stress 'Diagnosis'	G126_STR_CAT  0-14 = Normal (= 1) 15-18 = Mild (= 2) 19-25 = Moderate (= 3) 26-33 = Severe (= 4) 34+ = Extremely severe (= 5)

# Generalised Anxiety Disorder 7-Item Scale (GAD-7)

## Source items:

Raine Variable Name	Description
G126_GAD1	Feel nervous, anxious or on edge
G126_GAD2	Not able to stop or control worry
G126_GAD3	Worry too much about things
G126_GAD4	Trouble relaxing
G126_GAD5	Too restless to sit still
G126_GAD6	Easily annoyed or irritable
G126_GAD7	Afraid something awful might happen
G126_GAD8	How difficult have these probs made it for day to day activities?

## Derived variables:

G126_GAD_TOT	GAD-7 Total
G126_GAD_TOT_CAT	GAD-7 Diagnosis

## How the derived variables were calculated:

GAD-7 Total	$G126\_GAD\_TOT = G126\_GAD1 + G126\_GAD2 + G126\_GAD3 + G126\_GAD4 + G126\_GAD5 + G126\_GAD6 + G126\_GAD7$
GAD-7 Diagnosis	$G126\_GAD\_TOT\_CAT$  0-4 = Normal (=0) 5-9 = Mild anxiety (=1) 10-14 = Moderate anxiety (=2) 15+ = Severe anxiety (=3)

# Patient Health Questionnaire (PHQ-9)

## Source items:

Raine Variable Name	Description
G126_PH1	Little interest in doing things
G126_PH2	Feel down, depressed, hopeless
G126_PH3	Sleep trouble
G126_PH4	Feel tired
G126_PH5	Poor appetite or overeating
G126_PH6	Feel bad about self
G126_PH7	Trouble concentrating
G126_PH8	Being slow or fidgety
G126_PH9	Suicidal or self harm thoughts
G126_PH10	How difficult have these problems made it for day to day activities?

## Derived variables:

G126_PHQ_TOT	PHQ-9 Total
G126_PHQ_TOT_CAT	PHQ-9 Diagnosis

## How the derived variables were calculated:

PHQ-9 Total	$G126\_PHQ\_TOT = G126\_PH1 + G126\_PH2 + G126\_PH3 + G126\_PH4 + G126\_PH5 + G126\_PH6 + G126\_PH7 + G126\_PH8 + G126\_PH9$
PHQ-9 Diagnosis	$G126\_PHQ\_TOT\_CAT$ 0-4 = 'Normal' (= 0) 5-9 = 'Minimal symptoms' (=1) 10-14 = 'Minor depression or major depression (mild)' (=2) 15-19 = 'Major depression (moderate)' (= 3) 20+ = 'Major depression (severe)' (=4)

# International Physical Activity Questionnaire (IPAQ) - SF

## Source items:

Raine Variable Name	Description
G126_AY1	Vigorous physical activity in last week
G126_AY2	Vigorous physical activity - How many days per week?
G126_AY3	Vigorous physical activity - number of hours per day
G126_AY4	Vigorous physical activity - number of minutes per day
G126_AY5	Moderate physical activity in last week
G126_AY6	Moderate physical activity - How many days per week?
G126_AY7	Moderate physical activity - number of hours per day
G126_AY8	Moderate physical activity - number of minutes per day
G126_AY9	Walking in the last week
G126_AY10	Walking - How many days per week?
G126_AY11	Walking - number of hours per day
G126_AY12	Walking - number of minutes per day
G126_SIT1	Number of hours per day last week spent sitting on a weekday
G126_SIT2	Number of minutes per day last week spent sitting on a weekday
G126_SIT4	Number of hours per day last week spent sitting on a weekend day
G126_SIT5	Number of minutes per day last week spent sitting on a weekend day

## Derived variables:

G126_Vig_Mins	IPAQ - Total Vigorous activity in mins/day
G126_Mod_Mins	IPAQ - Total Moderate activity in mins/day
G126_Walk_Mins	IPAQ - Total Walking in mins/day
G126_Vig_Days	IPAQ - Total Number of days of vigorous activity
G126_Mod_Days	IPAQ - Total Number of days of moderate activity
G126_Walk_Days	IPAQ - Total Number of days of walking
G126_VIG_MET	IPAQ - Total Metabolic Equivalent Minutes of Vigorous Activity, per week
G126_MOD_MET	IPAQ -Total Metabolic Equivalent Minutes of Moderate Activity, per week
G126_WALK_MET	IPAQ - Total Metabolic Equivalent Minutes Walking, per week
G126_TOT_MET	IPAQ -Total Metabolic Equivalent Minutes of Activity, per week
G126_IPAQ_Cat	IPAQ -Categorised Activity Level (Low, Moderate, High)
G126_Sit_Weekday	IPAQ -Total minutes sitting per week day
G126_Sit_Weekend	IPAQ -Total minutes sitting per weekend day

## How the derived variables were calculated:

### 1) Summary of Data Processing

- All time was converted to minutes
- Minutes less than 10 were recoded to 0
- Total daily minutes of moderate, vigorous, and walking greater than 180 were truncated to 180
- The variable “exclude960” indicates cases that the total minutes reported are greater than 960 per day and thus should be excluded from the analysis.
  - 0=less than or equal to 960 minutes and should be included
  - 1=total minutes greater than 960 and should be EXCLUDED
- Continuous variables-
  - Minutes per day and met-minutes per week in moderate, vigorous, walking, total met-minutes per week
  - Due to the non-normal distribution of continuous activity scores, medians should be used instead of means as a summary variable
- Categorical variables (“category” and “trunc\_category”)
  - 0=Low
    - No activity is reported OR
    - Some activity is reported but not enough to meet Categories 2 or 3
  - 1=Moderate
    - 3 or more days of vigorous activity of at least 20 minutes per day OR
    - 5 or more days of moderate-intensity activity and/or walking of at least 30 minutes per day OR
    - 5 or more days of any combination of walking, moderate-intensity or vigorous intensity activities achieving a minimum of at least 600 MET-minutes/week.
  - 2=High
    - Vigorous-intensity activity on at least 3 days and accumulating at least 1500 MET-minutes/week OR
    - 7 days of any combination of walking, moderate- or vigorous-intensity activities accumulating at least 3000 MET-minutes/week
- Sitting variables
  - Presented as minutes per week day, minutes per weekend day

IPAQ - Total Vigorous activity in mins/day	$G126\_Vig\_Mins = (G126\_AY3*60)+G126\_AY4$
IPAQ - Total Moderate activity in mins/day	$G126\_Mod\_Mins = (G126\_AY7*60)+G126\_AY8$
IPAQ - Total Walking in mins/day	$G126\_Walk\_Mins = (G126\_AY11*60)+G126\_AY12$
IPAQ - Total Number of days of vigorous activity	$G126\_Vig\_Days = G126\_AY2$

IPAQ - Total Number of days of moderate activity	$G126\_Mod\_Days = G126\_AY6$
IPAQ - Total Number of days of walking	$G126\_Walk\_Days = G126\_AY10$
IPAQ - Total Metabolic Equivalent Minutes of Vigorous Activity, per week	$G126\_VIG\_MET = 8.0 * G126\_Vig\_Mins * G126\_Vig\_Days$
IPAQ -Total Metabolic Equivalent Minutes of Moderate Activity, per week	$G126\_MOD\_MET = 4.0 * G126\_Mod\_Mins * G126\_Mod\_Days$
IPAQ - Total Metabolic Equivalent Minutes Walking, per week	$G126\_WALK\_MET = 3.3 * G126\_Walk\_Mins * G126\_Walk\_Days$
IPAQ -Total Metabolic Equivalent Minutes of Activity, per week	$G126\_TOT\_MET = G126\_VIG\_MET + G126\_MOD\_MET + G126\_WALK\_MET$
IPAQ -Categorised Activity Level (Low, Moderate, High)	<p><math>G126\_IPAQ\_Cat =</math></p> <p>0 = low Those individuals who not meet criteria for Categories 2 or 3 are considered to have a 'low' physical activity level</p> <p>1 = moderate</p> <ul style="list-style-type: none"> <li>• 3 or more days of vigorous-intensity activity of at least 20 minutes per day OR</li> <li>• 5 or more days of moderate-intensity activity and/or walking of at least 30 minutes per day OR</li> <li>• 5 or more days of any combination of walking, moderate-intensity or vigorous intensity activities achieving a minimum Total physical activity of at least 600 MET-minutes/week.</li> </ul> <p>2 = high</p> <ul style="list-style-type: none"> <li>• vigorous-intensity activity on at least 3 days achieving a minimum Total physical activity of at least 1500 MET-minutes/week OR</li> <li>• 7 or more days of any combination of walking, moderate-intensity or vigorous-intensity activities achieving a minimum Total physical activity of at least 3000 MET-minutes/week.</li> </ul>
IPAQ -Total minutes sitting per week day	$G126\_Sit\_Weekday = (G126\_SIT1*60)+G126\_SIT2$
IPAQ -Total minutes sitting per weekend day	$G126\_Sit\_Weekend = (G126\_SIT4*60)+G126\_SIT5$

*NOTE: see for more processing details: IPAQ – Guidelines for data processing and analysis of the International Physical Activity Questionnaire (IPAQ) – Short and Long Forms. November 2005.*

# Örebro Musculoskeletal Pain Screening Questionnaire - Short Form (ÖMPSQ-SF)

## Source items:

Raine Variable Name	Description
G126_WPN6	How long have you had your current pain
G126_PN80	How would you rate the pain that you have had during the last week
G126_LI29	How tense/anxious have you felt in the past week
G126_LI30	How much have you been bothered by feeling depressed in the past week
G126_PN88	I can do light work for an hour
G126_PN92	I can sleep at night
G126_PN86	An increase in pain is an indication that I should stop what I'm doing until pain decreases
G126_PN87	I should not do my normal work with my present pain
G126_PN84	How large is the risk that your current pain may become persistent
G126_PN95A	What are the chances that you will be working normal duties in 3 months

## Derived variables:

G126\_Orebro

ÖMPSQ-SF Total Score

G126\_PSI

Pain Severity Index - sum(PN106-PN115,WPN6,PN80)

## How the derived variables were calculated:

ÖMPSQ-SF Total Score	Reverse order of G126_PN88, G126_PN92, G126_PN95A: $G126\_PN88=10-G126\_PN88$ $G126\_PN92=10-G126\_PN92$ $G126\_PN95A=10-G126\_PN95A$  $G126\_Orebro=G126\_WPN6+G126\_PN80+G126\_LI29+G126\_LI30+G126\_PN88+G126\_PN92+G126\_PN86+G126\_PN87+G126\_PN84+G126\_PN95A$
Pain Severity Index	$G126\_PSI = \text{sum}(PN106-PN115,WPN6,PN80)$

## Notes

Also note that there are small differences in wording and answer categories compared to original questionnaire.





# Prospective-Retrospective Memory Questionnaire (PRMQ)

## Source items:

Raine Variable Name	Description
G126_Cog1	Decide to do something then forget
G126_Cog2	Failed to recognise a revisited place
G126_Cog3	Fail to do something in a few minutes time
G126_Cog4	Forget what told a few minutes before
G126_Cog5	Forget appointments
G126_Cog6	Fail to recognise a character from scene to scene
G126_Cog7	Forget to buy something
G126_Cog8	Forget things over last few days
G126_Cog9	Repeat same story to same person
G126_Cog10	Leave things behind
G126_Cog11	Mislay things
G126_Cog12	Fail to mention or give something to a visitor
G126_Cog13	Look at something not realise seen it moments before
G126_Cog14	Forget to recontact a friend
G126_Cog15	Forget what watched on TV previous day
G126_Cog16	Forget to tell someone something

## Derived variables:

G126_Cog_Pros	PRMQ Prospective subscale score
G126_Cog_Retro	PRMQ Retrospective subscale score
G126_Cog_TOT	PRMQ Total score
G126_Cog_Pros_T	PRMQ Prospective score converted to T score
G126_Cog_Retro_T	PRMQ Retrospective score converted to T score
G126_Cog_TOT_T	PRMQ Total score converted to T score
G126_Cog_Pros_Z	PRMQ Prospective score converted to Z score
G126_Cog_Retro_Z	PRMQ Retrospective score converted to Z score
G126_Cog_TOT_Z	PRMQ Total score converted to Z score

How the derived variables were calculated:

PRMQ Prospective subscale score	$G126\_Cog\_Pros = G126\_Cog1 + G126\_Cog3 + G126\_Cog5 + G126\_Cog7 + G126\_Cog10 + G126\_Cog12 + G126\_Cog14 + G126\_Cog16$
PRMQ Retrospective subscale score	$G126\_Cog\_Retro = G126\_Cog2 + G126\_Cog4 + G126\_Cog6 + G126\_Cog8 + G126\_Cog9 + G126\_Cog11 + G126\_Cog13 + G126\_Cog15$
PRMQ Total score	$G126\_Cog\_TOT = G126\_Cog\_Pros + G126\_Cog\_Retro$

*NOTE: for more details about T and Z scores please contact the Raine Study*

# 12-Item Short Form Health Survey (SF-12) Version 2.0

## Source items:

Raine Variable Name	Description	Recoded into:
G126_OAL8	In general, would you say you're in good health	v1
G126_LI12	Health limit activities - moderate activities	v2a
G126_LI14	Health limit activities - climbing several flights of stairs	v2b
G126_LI22	Problems due to physical health - accomplished less	v3a
G126_LI23	Problems due to physical health - limited kind of work/other activities	v3b
G126_LI26	Problems due to emotional health - accomplished less	v4a
G126_LI27	Problems due to emotional health - did work/other activities less carefully than usual	v4b
G126_PN26	In past 4 weeks - how much did pain interfere with your normal work	v5
G126_FE23	In past 4 weeks - have you felt calm and peaceful	v6a
G126_FE24	In past 4 weeks - did you have a lot of energy	v6b
G126_FE25	In past 4 weeks -have you felt downhearted and depressed	v6c
G126_LI28	In past 4 weeks - how much time has your physical/emotional health interfered with social	v7

## Derived variables:

G126_PCS	SF12 - PHYSICAL HEALTH COMPOSITE SCORE
G126_MCS	SF12 -MENTAL HEALTH COMPOSITE SCORE
G126_PF_T	SF12 -PHYSICAL FUNCTIONING T-SCORE
G126_RP_T	SF12 -ROLE LIMITATION PHYSICAL T-SCORE
G126_BP_T	SF12 -PAIN T-SCORE
G126_GH_T	SF12 -GENERAL HEALTH T-SCORE

G126_VT_T	SF12 -VITALITY T-SCORE
G126_RE_T	SF12 -ROLE LIMITATION EMOTIONAL T-SCORE
G126_SF_T	SF12 -SOCIAL FUNCTIONING T-SCORE
G126_MH_T	SF12 -MENTAL HEALTH T-SCORE

How the derived variables were calculated:

- Prepared variables for calculating scales so higher score means better health

The "order for a better score" was flipped a few times. This is standard.

New Var Code	Var Value	New Value/Formula
v1	1	5
v1	2	4.4
v1	3	3.4
v1	4	2
v1	5	1
v5		6 - V5
v6a & v6b		6 - V6*

- Created scales of domain scores

These scales should not be used individually given the reduced reliability of SF-12 to SF-36; however, they needed to be calculated for the composite scores. The Z-scores are created using the standard method and the US norm data (not age/gender based, n~7500).

Calculated individual scale then converted to a Z-score before constructing composites. Final results are presented as T-scores.

Physical Function (PF)

$$PF = V2a + V2b \quad PF \text{ Z-Score} \quad PF \text{ T-Score} = G126\_PF\_T$$

$$PF = 100 * (PF - 2)/4 \quad \rightarrow \quad PF\_Z = (PF - 81.18122)/29.10588 \quad \rightarrow \quad PF\_T = 50 + (PF\_Z*10)$$

Role Physical (RP)

$$RP = V3a + V3b \quad RP \text{ Z-Score} \quad RP \text{ T-Score} = G126\_RP\_T$$

$$RP = 100 * (RP - 2)/8 \rightarrow RP\_Z = (RP - 80.52856)/27.13526 \rightarrow RP\_T = 50 + (RP\_Z*10)$$

#### Bodily Pain (BP)

$$BP = V5 \quad BP \text{ Z-Score} \quad BP \text{ T-Score} = G126\_BP\_T$$

$$BP = 100 * (BP - 1)/4 \rightarrow BP\_Z = (BP - 81.74015)/24.53019 \rightarrow BP\_T = 50 + (BP\_Z*10)$$

#### General Health (GH)

$$GH = V1 \quad GH \text{ Z-Score} \quad GH \text{ T-Score} = G126\_GH\_T$$

$$GH = 100 * (GH - 1)/4 \rightarrow GH\_Z = (GH - 72.19795)/23.19041 \rightarrow GH\_T = 50 + (GH\_Z*10)$$

#### Vitality (VT)

$$VT = V6b \quad VT \text{ Z-Score} \quad VT \text{ T-Score} = G126\_VT\_T$$

$$VT = 100 * (VT - 1)/4 \rightarrow VT\_Z = (VT - 55.59090)/24.84380 \rightarrow VT\_T = 50 + (VT\_Z*10)$$

#### Social Functioning (SF)

$$SF = V7 \quad SF \text{ Z-Score} \quad SF \text{ T-Score} = G126\_SF\_T$$

$$SF = 100 * (SF - 1)/4 \rightarrow SF\_Z = (SF - 83.73973)/24.75775 \rightarrow SF\_T = 50 + (SF\_Z*10)$$

#### Role Emotional (RE)

$$RE = V4a + V4b \quad RE \text{ Z-Score} \quad RE \text{ T-Score} = G126\_RE\_T$$

$$RE = 100 * (RE - 2)/8 \rightarrow RE\_Z = (RE - 86.41051)/22.35543 \rightarrow RE\_T = 50 + (RE\_Z*10)$$

#### Mental Health (MH)

$$MH = V6a + V6c \quad MH \text{ Z-Score} \quad MH \text{ T-Score} = G126\_MH\_T$$

$$MH = 100 * (MH - 2)/8 \rightarrow MH\_Z = (MH - 70.18217)/20.50597 \rightarrow MH\_T = 50 + (MH\_Z*10)$$

- Constructed composite scores

SF12 - PHYSICAL HEALTH COMPOSITE SCORE = G126\_PCS

$$\begin{aligned} G126\_PCS &= (PF\_Z * 0.42402) + (RP\_Z * 0.35119) + (BP\_Z * 0.31754) + (GH\_Z * 0.24954) \\ &\quad + (VT\_Z * 0.02877) + (SF\_Z * -0.00753) + (RE\_Z * -0.19206) + (MH\_Z * -0.22069) \\ G126\_PCS &= 50 + (PCS * 10) \end{aligned}$$

SF12 -MENTAL HEALTH COMPOSITE SCORE = G126\_MCS

$$\begin{aligned} G126\_MCS &= (PF\_Z * -0.22999) + (RP\_Z * -0.12329) + (BP\_Z * -0.09731) + (GH\_Z * -0.01571) \\ &\quad + (VT\_Z * 0.23534) + (SF\_Z * 0.26876) + (RE\_Z * 0.43407) + (MH\_Z * 0.48581) \\ G126\_MCS &= 50 + (MCS * 10) \end{aligned}$$

# Restless Leg Syndrome

## Source items:

Raine Variable Name	Description
G126_SL72	When sitting or lying down, do you have a strong urge to move your legs?
G126_SL73	Is your urge to move your legs accompanied by a discomfort (unpleasant sensation) in your legs, for example a creepy-crawly or tingly feeling?
G126_SL74	Is the discomfort in your legs relieved in any way, even for a short time, by walking or moving your legs?
G126_SL75	At what times is the discomfort in your legs and/or urge to move most bothersome?

## Derived variables:

G126\_RLS                                      Restless Leg Syndrome 'Diagnosis'

## How the derived variables were calculated:

Restless Leg Syndrome 'Diagnosis'	<p>G126_RLS</p> <p>DO IF ((G126_SL72=4 OR G126_SL72=5) AND (G126_SL73=1) AND (G126_SL74=1) AND (G126_SL75=3 OR G126_SL75=4)). COMPUTE G126_RLS=1. ELSE. COMPUTE G126_RLS=0. END IF.</p> <p>0 = no 1 = yes</p>
-----------------------------------	---

:

# Functional Outcomes of Sleep Questionnaire - 10 Item (FOSQ-10) Short Form

## Source items:

Raine Variable Name	Description	Recorded into
G126_FOS1	Difficulty concentrating because tired	v1
G126_FOS2	Difficulty rememberin because tired	v2
G126_FOS3	Difficulty operating motor vehicle <160km because tired	v3
G126_FOS4	Difficulty operating motor vehicle >160km because tired	v4
G126_FOS5	Difficulty visiting people because tired	v5
G126_FOS6	Difficult relationship with people because tired	v6
G126_FOS7	Difficulty watching movie because tired	v7
G126_FOS8	Difficulty being active in evening because tired	v8
G126_FOS9	Difficulty being active in morning because tired	v9
G126_FOS10	Desire for intimacy / sex affected because tired	v10

## Derived variables:

G126_FOS_GP	FOSQ - General Productivity Subscale
G126_FOS_V	FOSQ - Vigilance Subscale
G126_FOS_SO	FOSQ - Social Outcomes Subscale
G126_FOS_AL	FOSQ - Activity Level Subscale
G126_FOS_SD	FOSQ - Sexual Desire Subscale
G126_FOS_Total	FOSQ Total Score

## How the derived variables were calculated:

FOSQ - General Productivity Subscale	$G126\_FOS\_GP = \text{mean}(v1, v2)$
FOSQ - Vigilance Subscale	$G126\_FOS\_V = \text{mean}(v3, v4, v7)$
FOSQ - Social Outcomes Subscale	$G126\_FOS\_SO = v5$
FOSQ - Activity Level Subscale	$G126\_FOS\_AL = \text{mean}(v6, v8, v9)$
FOSQ - Sexual Desire Subscale	$G126\_FOS\_SD = v10$
FOSQ Total Score	$G126\_FOS\_Total = \text{MEAN.2}(G126\_FOS\_GP, G126\_FOS\_V, G126\_FOS\_SO, G126\_FOS\_AL, G126\_FOS\_SD) * 5$

# Attention-Related Cognitive Errors Scale (ARCES)

## Source items:

Raine Variable Name	Description
G126_aCg1	Fridge for one thing but got another
G126_aCg2	Room for one thing but got another
G126_aCg3	Zoned out of conversation
G126_aCg4	Put things in wrong places
G126_aCg5	Wondered why went into a room
G126_aCg6	Start one task get distracted to do something else
G126_aCg7	Can't remember what just read
G126_aCg8	Mistake because doing one thing but thinking about another
G126_aCg9	Absent-mindedly mixed up things
G126_aCg10	Double check things e.g locked door
G126_aCg11	Misplaced frequently used objects
G126_aCg12	Can't see what I am looking for even though it's in front

## Derived variables:

G126\_aCg\_Total                      ARCES Total Summed Score

G126\_aCg\_Mean                      ARCES Mean Score

## How the derived variables were calculated:

ARCES Total Summed Score	G126_aCg_Total = SUM.2(G126_aCg1,G126_aCg2,G126_aCg3,G126_aCg4,G126_aCg5,G126_aCg6,G126_aCg7,G126_aCg8,G126_aCg9,G126_aCg10,G126_aCg11,G126_aCg12)
ARCES Mean Score	G126_aCg_Mean = MEAN.2(G126_aCg1,G126_aCg2,G126_aCg3,G126_aCg4,G126_aCg5,G126_aCg6,G126_aCg7,G126_aCg8,G126_aCg9,G126_aCg10,G126_aCg11,G126_aCg12)

# Pittsburgh Sleep Symptom Questionnaire - Insomnia (PSSQ\_I)

## Source items:

Raine Variable Name	Description
G126_ps1	Last mth - difficulty falling asleep
G126_psa	How long has symptom lasted - weeks/months/years
G126_psa1	Number of weeks/months/years
G126_ps2	Last mth - difficulty staying asleep
G126_psb	How long has symptom lasted - weeks/months/years
G126_psb2	Number of weeks/months/years
G126_ps3	Last mth - Frequent waking
G126_psc	How long has symptom lasted - weeks/months/years
G126_psc3	Number of weeks/months/years
G126_ps4	Last mth - Not sound sleep
G126_psd	How long has symptom lasted - weeks/months/years
G126_psd4	Number of weeks/months/years
G126_ps5	Last mth - Sleep unrefreshing
G126_pse	How long has symptom lasted - weeks/months/years
G126_pse5	Number of weeks/months/years
G126_ps6	Last mth - sleep probs bother you
G126_ps7	Last mth - sleep probs affected work
G126_ps8	Last mth - sleep probs affected social life
G126_ps9	Last mth - Sleep probs affected life
G126_ps10	Last mth - Sleep probs made you irritable
G126_ps11	Last mth - sleep probs trouble concentrating
G126_ps12	Last mth - sleep probs make you fatigued
G126_ps13	Last mth - how sleepy during day

## Derived variables:

G126_ps1_01	During the past month, how many nights or days, per week, have you had or been told you had, the following symptoms? Difficulty falling asleep - Indicator of "Freq" or "Always"
G126_psa_01	How long has symptom (difficulty falling asleep) lasted - Indicator of "> 4 weeks"
G126_ps2_01	During the past month, how many nights, or days per week, have you had, or been told you had, the following symptom? - Difficulty staying asleep - indicator of "Freq" or "Always"
G126_psb_01	How long has the symptom (difficulty staying asleep) lasted - Indicator of "> 4 weeks"

G126_ps5_01	During the past month, how many nights, or days per week, have you had, or been told you had, the following symptom? - Feeling that your sleep is unrefreshing - Indicator of "Freq" or "Always"
G126_pse_01	How long has the symptom (feeling that your sleep is unrefreshing) lasted? - Indicator of "> 4 weeks"
G126_PS_SSC	PSSQ_I sleep symptom criterion
G126_PS_DC	PSSQ_I duration criterion
G126_PS_DIC	PSSQ_I daytime impairment criterion
G126_PS_INS	PSSQ_I diagnosed insomnia

#### How the derived variables were calculated:

PSSQ_I sleep symptom criterion	<p>G126_PS_SSC</p> <pre>DO IF (G126_ps1_01 = 1   G126_ps2_01 = 1   G126_ps5_01 = 1). COMPUTE G126_PS_SSC=1. ELSE. COMPUTE G126_PS_SSC=0. END IF.</pre>
PSSQ_I duration criterion	<p>G126_PS_DC</p> <pre>DO IF (G126_psa_01 = 1   G126_psb_01 = 1   G126_pse_01 = 1). COMPUTE G126_PS_DC=1. ELSE. COMPUTE G126_PS_DC=0. END IF.</pre>
PSSQ_I daytime impairment criterion	<p>G126_PS_DIC</p> <pre>DO IF (G126_ps6 &gt;= 3   G126_ps7 &gt;= 3   G126_ps8 &gt;= 3   G126_ps9 &gt;= 3   G126_ps10 &gt;= 3   G126_ps11 &gt;= 3   G126_ps12 &gt;= 3   G126_ps13 &gt;= 3). COMPUTE G126_PS_DIC=1. ELSE. COMPUTE G126_PS_DIC=0. END IF.</pre>
PSSQ_I diagnosed insomnia	<p>G126_PS_INS</p> <pre>DO IF (G126_PS_DC = 1 AND G126_PS_DC = 1 AND G126_PS_DIC = 1).</pre>

```
COMPUTE G126_PS_INS=1.  
ELSE.  
COMPUTE G126_PS_INS=0.  
END IF.
```

0 = do not diagnose insomnia  
1 = diagnose insomnia

# Epworth Sleepiness Scale (ESS)

## Source items:

Raine Variable Name	Description
G126_EPW1	Sleep when sitting and reading
G126_EPW2	Sleep when watching TV
G126_EPW3	Sleep when sitting in public place
G126_EPW4	Sleep when passenger vehicle >1hour
G126_EPW5	Sleep when lying down in afternoon
G126_EPW6	Sleep when sitting and talking to someone
G126_EPW7	Sleep when sitting after lunch (no alcohol)
G126_EPW8	Sleep when stop for few minutes while driving

## Derived variables:

G126\_EPW\_score                      Epworth Sleepiness Total Score

G126\_EPW\_cat                        Epworth Sleepiness Total Category

## How the derived variables were calculated:

Epworth Sleepiness Total Score	$G126\_EPW\_score = G126\_EPW1 + G126\_EPW2 + G126\_EPW3 + G126\_EPW4 + G126\_EPW5 + G126\_EPW6 + G126\_EPW7 + G126\_EPW8$
Epworth Sleepiness Total Category	<p>G126_EPW_cat</p> <p>0-5 = 'Lower Normal Daytime Sleepiness' (=0)            6-10 = 'Higher Normal Daytime Sleepiness' (=1)            11-12 = 'Mild Excessive Daytime Sleepiness' (=2)            13-15 = 'Moderate Excessive Daytime Sleepiness' (= 3)            16-24 = 'Severe Excessive Daytime Sleepiness' (=4)</p>

# Pittsburgh Sleep Quality Inventory (PSQI)

## Source items:

Raine Variable Name	Description	Recoded into
G126_BED	What time (on average) have you gone to bed at night	v1
G126_SL1	How long does it usually take you to fall asleep (minutes)	v2
G126_WAKE	What time (on average) have you gotten up in the morning	v3
G126_SL2A	How many total hours of actual sleep do you usually get (hours)	v4
G126_SL6	Trouble sleeping- Cannot get to sleep within 30 minutes	v5
G126_SL7	Trouble sleeping- Wake up in the middle of the night or early morning	v6
G126_SL8	Trouble sleeping- Have to get up to use the bathroom	v7
G126_SL9	Trouble sleeping-Cannot breathe comfortably	v8
G126_SL10	Trouble sleeping-Cough or snore loudly	v9
G126_SL11	Trouble sleeping-Feel too cold	v10
G126_SL12	Trouble sleeping-Feel too hot	v11
G126_SL13	Trouble sleeping- Had bad dreams	v12
G126_SL14	Trouble sleeping-Have pain	v13
G126_SL15	Trouble sleeping-other reasons	v14
G126_SL16	During the past month, how would you rate your sleep quality overall?	v15
G126_SL17	In past month, how often taken medicine to help you sleep?	v16
G126_SL18A	In past month, how often have you had trouble staying awake driving/eating/social	v17
G126_SL19	Past month, how big problem having enough enthusiasm to get things done?	v18
G126_SL20	Do you have a bed partner/room mate	v19

## Derived variables:

G126_PSQI_C1	PSQI Comp1 - subjective sleep quality
G126_PSQI_C2	PSQI Comp2 - sleep latency
G126_PSQI_C3	PSQI Comp3 - sleep duration
G126_PSQI_C4	PSQI Comp4 - habitual sleep efficiency
G126_PSQI_C5	PSQI Comp5 - sleep disturbances
G126_PSQI_C6	PSQI Comp6 - use of sleep medications
G126_PSQI_C7	PSQI Comp7 - daytime dysfunction

G126\_PSQI\_TOTAL                      PSQI Total Score - Continuous  
 G126\_PSQI\_TOTAL\_CAT                PSQI Total Score – Categorical

How the derived variables were calculated:

Component 1: Subjective sleep quality = G126\_PSQI\_C1

$$\text{Comp1} = v15$$

Component 2: Sleep latency = G126\_PSQI\_C2

Assign categorical coding for v2 in new variable (x1):

Response	x1
≤ 15 mins	0
16-30 mins	1
31 - 60 mins	2
> 60 mins	3

Sum x1 and v5 scores together in new variable (x2)

Assign Comp2 score as follows:

x2 Sum	Comp2
0	0
1 - 2	1
3 - 4	2
5 - 6	3

Component 3: Sleep duration = G126\_PSQI\_C3

Assign categorical coding for v4 for Comp3.

Response	Comp3
> 7 hrs	0
6 - 7 hrs	1
5 - 6 hrs	2
< 5 hrs	3

Component 4: Habitual sleep efficiency = G126\_PSQI\_C4

First, you need to calculate the amount of hours spent in bed, then calculate sleep efficiency.

$$\text{HrsBed} = (v3 + 24\text{hrs}) - v1$$

$$\text{SleepEff (\%)} = v4/\text{HrsBed} \times 100$$

Assign categorical coding for Comp4

Response	Comp4
> 85%	0
75 - 84%	1
65 - 74%	2
< 65%	3

Component 5: Sleep disturbances = G126\_PSQI\_C5

SleepDis = sum(v6:v14)

Assign categorical coding for Comp5.

Response	Comp5
0	0
1 - 9	1
10 - 18	2
19 - 27	3

Component 6: Use of sleeping medication = G126\_PSQI\_C6

Comp6 = v16

Component 7: Daytime dysfunction = G126\_PSQI\_C7

DayDys = v17 + v18

Assign categorical coding for Comp7.

Response	Comp7
0	0
1 - 2	1
3 - 4	2
5 - 6	3

Global PSQI Score = G126\_PSQI\_TOTAL

GlobalPSQI = sum(Comp1:Comp7)

PSQI Total Score – Categorical = G126\_PSQI\_TOTAL\_CAT

≤ 5 = good sleep quality (=1)

>5 = poor sleep quality (= 2)

# Morningness-Eveningness Questionnaire (MEQ)

## Source items:

Raine Variable Name	Description
G126_ME1	Best time to get up
G126_ME2	Best time to go to bed
G126_ME3	How dependent on alarm clock
G126_ME4	how easy getting up
G126_ME5	How alert in first half hour
G126_ME6	Appetite in first half hour
G126_ME7	Tiredness in first half hour
G126_ME8	No commitments the next day - same bed time
G126_ME9	Exercise between 7 - 8 am. How would you perform
G126_ME10	What time at night do you want to sleep
G126_ME11	Best testing time
G126_ME12	bedtime 11.00pm - how tired
G126_ME13	Late night - when wake up
G126_ME14	Awake 4 - 6 am - what would you do
G126_ME15	2 hours hard physical work - when
G126_ME16	Exercise between 10 -11 pm. How would you perform
G126_ME17a-x	Best 5 consecutive work hours (indicator variables)
G126_ME18	Time of feeling best peak
G126_ME19	Evening or morning person

## Derived variables:

G126_MEQ_TOTAL	MEQ Total Score
G126_MEQ_TOTAL_CAT	MEQ Categorized Total Score

## How the derived variables were calculated:

MEQ Total Score	$G126\_MEQ\_TOTAL = G126\_ME1\_CAT + G126\_ME2\_CAT + G126\_ME3 + G126\_ME4 + G126\_ME5 + G126\_ME6 + G126\_ME7 + G126\_ME8 + G126\_ME9 + G126\_ME10\_CAT + G126\_ME11 + G126\_ME12 + G126\_ME13 + G126\_ME14 + G126\_ME15 + G126\_ME16 + G126\_ME17\_CAT + G126\_ME18\_CAT + G126\_ME19$
MEQ Categorized Total Score	$G126\_MEQ\_TOTAL\_CAT$ 16-30 = Definitely evening type (=1) 31-41 = Moderately evening type (=2) 42-58 = Neither type (=3) 59-69 = Moderately morning type (=4) 70-86 = Definitely morning type (=5)

# Berlin Questionnaire

## Source items:

Raine Variable Name	Description	Recoded into
G126_Bn1	Do you snore	v1
G126_Bn2	How loud snoring	v2
G126_Bn3	How often snore	v3
G126_Bn4	snoring bother others	v4
G126_Bn5	quit breathing during sleep	v5
G126_Bn6	How often tired after sleep	v6
G126_Bn7	when awake feel tired	v7
G126_Bn8	nodded off/ fallen asleep while driving	v8
G126_Bn9	How often asleep while driving	v9
G126_Bn10	Do you have high BP	v10
G126_BMI_I	Calculate indicator variable: 1 if BMI > 30kg/m <sup>2</sup>	v11

## Derived variables:

G126\_Bn\_Total                      Berlin Questionnaire - Indicator for risk of sleep apnoea

## How the derived variables were calculated:

<p>Berlin Questionnaire - Indicator for risk of sleep apnoea</p>	<p>v11 = 1 if G126_BMI&gt;30, otherwise 0</p> <p>Category 1 Sum questions v1 - v5. If <math>\geq 2</math>, then mark as 1 otherwise 0. Call the variable Cat1.</p> <p>Category 2 Sum questions v6 - v8. If <math>\geq 2</math>, then mark as 1 otherwise 0. Call the variable Cat2.</p> <p>Category 3 Sum questions v10 - v11. If <math>\geq 1</math>, then mark as 1 otherwise 0. Call the variable Cat3.</p> <p style="text-align: center;">G126_Bn_Total=SUM(G126_BnCat1,G126_BnCat2,G126_BnCat3)</p> <p>If sum(cat1, cat2, cat3) <math>\geq 2</math>, the participant is at high risk of sleep apnoea. If sum(cat1, cat2, cat3) &lt; 2, the participant is at low risk of sleep apnoea.</p> <p>0= low risk of sleep apnoea 1= high risk of sleep apnoea</p>
--	---

# Sleep questionnaire data Generation 0

## Notes:

Please note that the following variables are about Generation 0 but reported by Generation 1. They are stored under the Gen0 ID:

G126_SL78	Any of the following diagnosed by a doctor? - Sleep Apnoea
G126_SL79	Any of the following diagnosed by a doctor? - Narcolepsy
G126_SL80	Any of the following diagnosed by a doctor? - Loud or disruptive snoring
G126_S108	Any of the following diagnosed by a doctor? - Insomnia disorder
G126_SL81	Any of the following diagnosed by a doctor? - Excessive (too much) sleepiness
G126_SL82	Any of the following diagnosed by a doctor? - Restless legs or periodic leg movements of sleep