WISCONSIN SLEEP COHORT STUDY

SLEEP AND OUTCOMES QUESTIONNAIRE

This is one of two questionnaires included in this mailed survey (the other is an injury questionnaire). This questionnaire is 9 pages long and has 3 main sections.

1. Sleep habits and problems

2. Diagnosed and medically treated specific health problems

3. General health and well-being

When you have completed this questionnaire and the injury questionnaire, please return them in the included postage-paid addressed envelope along with the signed consent document.

Thank you!

Logo deleted to save space

SLEEP

1. How many hours of sleep do you usually get during:
(same as q 62 on >visit 1 interview)
a. a workday night? __ workday (99.99)___#hours

b. a weekend or nonwork night? __ weekend (99.99)___#hours

c. a typical week from daytime or evening **naps**? __naps (99.99)___#hours (*Enter 0 if none*)

(same as q 63 on >visit 1 interview)

2. About how many minutes does it **usually** take you to fall asleep at night?   __tso (999)___#minutes

3. How often, if ever, do you have any of the following problems sleeping?

(subset of q 64 on > visit1 interview)
0=Never
1=Rarely (once a month)
2=Sometimes (2-4 times a month)
3=Often (5-15 times a month)
4=Almost always (16-30 times a month)

(*Circle one response for each item*.)

	Never	Rarely	Some-times	Often	Almost Always

a. Do you have difficulty getting to sleep?   ps_diff (0-4)

b. Do you wake up during the night and have a hard time getting back to sleep?
ps_backsleep (0-4)

c. Do you wake up repeatedly during the night?   ps_wakerepeat (0-4)

d. Do you wake up too early in the morning and can't get back to sleep?   ps_tooearly (0-4)

e. Do you not feel rested during the day no matter how many hours of sleep you had?
ps_notrested (0-4)

f. Do you find it very difficult to wake up in the morning?   ps_wakeup (0-4)

g. Do you have nightmares or disturbing dreams? ps_nightmare (0-4)

h. Do you have feeling of excessive daytime sleepiness? ps_eds(0-4)

(same as q 65 on >visit 1 interview)

4. Have you ever **gone to a doctor** for any **sleep problem**? __Yes __No   sleep_prob (YN)

If yes: Please indicate when __prob_date (mmyyyy)_ (Month/Year) and answer the following questions:

a. What kind of doctor (general, family, sleep medicine, etc.) did you see?
    prob_doc1   prob_doc2   prob_doc3   (CODE_PHYSICIAN)

b. What, tests, if any, were done?
    prob_test1   prob_test2   prob_test3   (CODE_SLEEP_TESTING)

c. Did you see a doctor due to the results of your last sleep study in our lab? _Yes   _No
    prob_study (YN)

d. What sleep problem(s) were you trying to get help for?
    prob_code1   prob_code2   prob_code3   (CODE_SLEEP_DISORDER)

_____

(same as q 66 on >visit 1 interview)

5. Have you ever been **told by a doctor** that you have **sleep apnea**? _Yes _No   apnea (YN)

If yes: When was this? _apnea_date (mmyyyy)_ Month/Year

What tests, if any, were done? _
    apnea_test1 apnea_test2 apnea_test3 (CODE_SLEEP_TESTING)

Were you told you needed treatment? _Yes   __No   apnea_need (YN)

If yes: What treatment was recommended?
    apnea_treat1 apnea_treat2 apnea_treat3 (CODE_TREATMENT)

Did you have the treatment? __Yes __No   apnea_treated (YN)

If yes: When did you first have the treatment? _treatment_date (mmyyyy)_ Month/Year

Did the treatment help? (*check one*)

_1__Not at all   __2__Helped a little __3__Helped moderately   __4__Helped a lot
treatment_help (1-4)
(No comments fields like interview question has.)

If the treatment was CPAP or BiPAP:
If you <u>are not using</u> the recommended CPAP/BiPAP, please explain:
noncomp1   noncomp2   noncomp3 (CODE_CPAP_BIPAP)

If you are using the recommended CPAP/BiPAP, please indicate:
a. How many <u>nights per week</u> do you use it?
__comp_nights_wk (0-7)__

b. How many <u>hours per night</u> do you use it?
___comp_hrnight (0-12)___

Describe the problems, if any, you have with the CPAP/BiPAP:
comp_prob1 comp_prob2 comp_prob3 (CODE_CPAP_BIPAP)

(no narcolepsy question from interview

(same as q 68 on >visit 1 interview)

6. Have you ever been **told by a doctor** that you had any **other sleep disorder**? __Yes   __No
sd (YN)

If yes: What was the sleep disorder?
sd_code1 sd_code2 sd_code3 (CODE_SLEEP_DISORDER)

Do you still have this sleep disorder? _Yes   __No   sd_still_have_ynd   (New)

What tests, if any, were done?   sd_test1 sd_test2 sd_test3
(CODE_SLEEP_TESTING)

Were you told you needed treatment? _Yes   __No   sd_need (YN)

If yes: What treatment was recommended?
sd_treat1 sd_treat2 sd_treat3 (CODE_TREATMENT)

Did you have the treatment? __Yes   __No sd_treated (YN)
If yes: When did you first have the treatment?
sd_treat_date (mmyyyy)   Month/Year

Did the treatment help? (*check one*)
__1__Not at all   __2__Helped a little   __3__Helped moderately   __4__Helped a lot
sd_treat_help (1-4)

(Note do not have the treatment comments fields of the Interview)

(same as q 70 on >visit 1 interview)
8. Are you satisfied with your **usual** night's sleep (*check one*)?
_1_Most of the time   _2_Some of the time   _3_Not usually_4_Never
eval_general (1-4)

(part of q 70 on >visit 1 interview)
9. If there are any comments you would like to make about the quality of your sleep, or getting to sleep,
staying asleep, or waking up, please use the following space:
comment1   comment2   comment3   (CODE_SLEEP_COMMENTS)

The next section asks about specific medical problems. Please indicate if you have been told _by a doctor within the last 5 years_ that you have or have had any of these conditions.

20. **Coronary artery disease**? _____Yes   _____No   coronary_ynd

> **If yes**: Indicate how many years ago _____ or the year _____ you were diagnosed. coronary_year (yyyy)

> Describe what, if any, treatment you received. coronary_tx (CODE_MEDICAL_TREATMENT)

Have you been told _by a doctor within the last 5 years_ that you have or have had any of these conditions?

21. **Atherosclerosis** (hardening of the arteries)? ___Yes   ___No   atheroscl_ynd

> **If yes**: Indicate how many years ago _____ or the year _____ you were diagnosed. atheroscl_year (yyyy)

> Describe what, if any, treatment you received. atheroscl_tx (CODE_MEDICAL_TREATMENT)

22. **Irregular heartbeat or arrhythmia**? ___Yes   ___No arrhythmia_ynd

> **If yes**: Indicate how many years ago _____ or the year _____ you were diagnosed. arrhythmia_year (yyyy)

> Describe what, if any, treatment you received. arrhythmia_tx (CODE_MEDICAL_TREATMENT)

23. **Heart attack** or infarct? ___Yes   ___No heartattack_ynd

> **If yes**: Indicate how many years ago _____ or the year _____ you were diagnosed. heartattack_year (yyyy)

> Describe what, if any, treatment you received. heartattack_tx (CODE_MEDICAL_TREATMENT)

24. **Congestive heart failure**? ___Yes   ___No congestivehf_ynd

> **If yes**: Indicate how many years ago _____ or the year _____ you were diagnosed. congestivehf_year (yyyy)

> Describe what, if any, treatment you received. congestivehf_tx (CODE_MEDICAL_TREATMENT)

25. **Angina**? ___Yes   ___No angina_ynd

    If yes: Indicate how many years ago _____ or the year _____ you were diagnosed.
angina_year (yyyy)

        Describe what, if any, treatment you received. angina_tx CODE_MEDICAL_TREATMENT)

    (new. not on cardio either)
26. **Transient Ischemic attack** (a **TIA** or "mini stroke")**?** __Yes   __No tia_ynd

    If yes: Indicate how many years ago _____ or the year _____ you were diagnosed.   tia_year
(yyyy)

        Describe what, if any, treatment you received. tia_tx (CODE_MEDICAL_TREATMENT)

Have you been told _by a doctor within the last 5 years_ that you have or have had any of these conditions?

    (different wording (within last 5 years) than 36 on >visit1 interview)

27. **Stroke**? ___Yes   ___No stroke_ynd

    If yes: Indicate how many years ago _____ or the year _____ you were diagnosed.
stroke_year (yyyy)

        Describe what, if any, treatment you received. stroke_tx (CODE_MEDICAL_TREATMENT)

    (different wording (within last 5 years) than 35 on >visit1 interview)
28. **High blood pressure** or hypertension? ___Yes   ___No   hypertension_ynd

    If yes: Indicate how many years ago _____ or the year _____ you were diagnosed.
hypertension_year (yyyy)

        Describe what, if any, treatment you received. hypertension_tx
(CODE_MEDICAL_TREATMENT)

    (different wording (within last 5 years) than 37 on >visit1 interview)
29. **Diabetes**? ___Yes   ___No   diabetes_ynd

    If yes: Indicate how many years ago _____ or the year _____ you were diagnosed.
diabetes_year (yyyy)

      Describe what, if any, treatment you received. diabetes_tx (CODE_MEDICAL_TREATMENT)

    (different wording (within last 5 years) than 39 on >visit1 interview)
30. **Emphysema or Obstructive Lung Disease**? ___Yes   ___No   emphysema_ynd

    If yes: Indicate how many years ago _____ or the year _____ you were diagnosed.
emphysema_year (yyyy)

      Describe what, if any, treatment you received. emphysema_tx
(CODE_MEDICAL_TREATMENT)

    (different wording (within last 5 years) than 40 on >visit1 interview)

31. **Thyroid problem**? ___Yes   ___No   thyroid_ynd

> **If yes**: Indicate how many years ago _____ or the year _____ you were diagnosed.
> thyroid_year (yyyy)
>
> Describe the type of thyroid problem and what, if any, treatment you received.
> thyroid_problem_code (CODE_MEDICAL_TREATMENT)
> thyroid_tx (CODE_MEDICAL_TREATMENT)

(similar to 34g on >visit1 interview)
32. Which of the following procedures have you ever had? (check <u>all</u> that apply):

_Coronary bypass surgery coronary_bypass_ynd

_Coronary or balloon angioplasty angioplasty_ynd

_Insertion of pacemaker or defibrillator   pacemaker_ynd

_Other heart surgery (please describe): other_heart_surgery_ynd
other_heart_surg_code1   other_heart_surg_code2   other_heart_surg_code3
(CODE_MEDICAL_TREATMENT)

_None (not entered per se)

(different wording (within past 5 years) from 44 on >visit1 interview)
33. In the past 5 years have you had any major illness or hospitalization? __Yes __No illp5_ynd

> **If yes**: **a**. When was the *most recent* occurrence? illp5_year1   Month/Year   illp5_year1
> (mmyyyy)
> > Please describe it   illp5_code1 (CODE_MAJOR_ILLNESS)
>
> > **b**. When was the *next* most recent occurrence?   illp5_year2   Month/Year
> illp5_year2(mmyyyy)   _NA (not entered)
> > Please describe it: illp5_code2 (CODE_MAJOR_ILLNESS)
>
> > **c**. When was the *next* most recent occurrence?   illp5_year3   Month/Year
> _NA (not entered)
> > Please describe it:

(question not on Overnight Interview but was on Cardio Interview)

34. Are you currently (*check <u>all</u> that apply*):
　　　　　_Employed fulltime   employed_fulltime (0-1)
　　　　　_Employed part time   employed_parttime (0-1)
　　　　　_Employed seasonally employed_seasonally (0-1)
　　　　　_Fully retired   employed_retired (0-1)
　　　　　_Other   employed_other (0-1)

(Same as q12 on >visit 1 Interview)
35. What is your current occupation/job title (or previous job if you are now fully retired)?
type_work (CODE_OCCUPATION)

36. For your job, do you work (*check one*):
    _1_ Daytime hours
    _2_ Night shift
    _3_ Rotating shift
    _4_ Other hours, please explain:___(not entered)
    _8_ Does not apply
    type_shift (1,2,3,4,8)

(new)
37. Are you currently (*check one*)   marital_status(0-5)
        1_ Married
        2_ Separated
        3_ Divorced
        4_ Widowed
        5_ Single; never married

GENERAL HEALTH AND WELL-BEING

(Following 11 questions are the same as the "Short form sf36 health status survey" daytime instrume except that it does not have some introductory text.)

10 . In general, would you say you health is:
sf1 (1 - 5)
  __1__ Excellent   __2__ Very Good   __3__ Good   __4__Fair   __5__ Poor

11. **Compared to one year ago**, how would you rate your health in general **now**? (Check one)
sf2 (1 - 5)

  __1__ Much better now than 1 year ago   __4__ Somewhat worse now than 1 year ago
    __2__ Somewhat better now than 1 year ago   __5__ Much worse now than 1 year ago
__3__ About the same

12. The following items are about activities you might do during a typical day. Does **your health now limit you** in these activities? If so, how much? (Mark one answer on each line.)

	Yes, limited a lot	Yes, limited a little	No, not limited at all
	1	2	3

a. <u>Vigorous activities</u>, such as running, lifting heavy objects, sf3a (1 - 3)
   participating in strenuous sports.

b. <u>Moderate activities</u>, such as moving a table, pushing a   sf3b (1 - 3)
   vacuum cleaner, bowling, or playing golf.

c. Lifting or carrying groceries.   sf3c (1 - 3)

d. Climbing <u>several</u> flights of stairs.   sf3d (1 - 3)

e. Climbing one flight of stairs.   sf3e (1 - 3)

f. Bending, kneeling, or stooping.   sf3f (1 - 3)

g. Walking <u>more than a mile</u>.   sf3g (1 - 3)

h. Walking <u>several blocks</u>.   sf3h (1 - 3)

i. Walking <u>one block</u>.   sf3i (1 - 3)

j. Bathing or dressing yourself.   sf3j (1 - 3)

13. During the **past 4 weeks**, have you had any of the following problems with your work or other regular daily activities **result of your physical health**? (Mark one answer on each line.)

	YES	NO
	1	2

a. Cut down the <u>amount of time</u> you spent on work or other activities.   sf4a (1 - 2)

b. <u>Accomplished less</u> than you would like.   sf4b (1 - 2)

c. Were limited in the <u>kind</u> of work or activities.   sf4c (1 - 2)

d. Had difficulty performing the work or other activities (for example,   sf4d (1 - 2)
   it took extra effort).

(numbering anomaly)
12. During the **past 4 weeks**, have you had any of the following problems with your work or other
    regular daily activities **as a result of any emotional problems** (such as feeling depressed or
    anxious)? (Mark one answer on each line.)

	YES	NO
	1	2

a. Cut down the <u>amount of time</u> you spent on work or other activities.   sf5a (1 - 2)

b. <u>Accomplished less</u> than you would like.   sf5b (1 - 2)

c. Didn't do work or other activities as <u>carefully</u> as usual.   sf5c (1 - 2)

13. During the **past 4 weeks**, to what extent has your physical health or emotional problems interfered
    with your normal social activities with family, friends, neighbors, or groups? (Check one)
         sf6 (1 - 5)
    __1__ Not at all   __4__ Quite a bit
    __2__ Slightly   __5__ Extremely
    __3__ Moderately

14. How much **bodily** pain have you had during the **past 4 weeks**? (Check one)
         sf7 (1 -6)
    __1__ None   __4__ Moderate
    __2__ Very mild   __5__ Severe
    __3__ Mild   __6__ Very severe

15. During the **past 4 weeks**, how much did **pain** interfere with your normal work (including both work outside the hom
housework)? (Check one)
         sf8 (1 - 5)
    __1__ Not at all   __4__ Quite a bit
    __2__ Slightly   __5__ Extremely
    __3__ Moderately

16. These questions are about how you feel and how things have been with you **during the past 4 weeks**. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the during the past 4 weeks... (Mark one answer on each line.)

	All of the time	Most of the time	A good bit of the time	Some of the time	A little of the time	None of the time
	1	2	3	4	5	6

a. Did you feel full of pep?   sf9a (1 - 6)

b. Have you been a very nervous person? sf9b (1 - 6)

c. Have you felt so down in the dumps   sf9c (1 - 6)
      nothing could cheer you up?

d. Have you felt calm and peaceful? sf9d (1 - 6)

e. Did you have a lot of energy?   sf9e (1 - 6)

f. Have you felt downhearted and blue? sf9f (1 - 6)

g. Did you feel worn out?   sf9g (1 - 6)

h. Have you been a happy person?   sf9h (1 - 6)

i. Did you feel tired?   sf9i (1 - 6)

17. During the **past 4 weeks**, how much of the time has your **physical or emotional problems** interfered with your social activities (like visiting friends, relatives, etc.)? (Check one)
   sf10 (1 -5)
   __1__ All of the time   __4__ A little of the time
__2__ Most of the time   __5__ None of the time
   __3__ Some of the time

18. Please choose the answer that best describes how **true** or **false** each of the following statements is for you. (Mark one answer on each line.)

	Definitely True	Mostly True	Not Sure	Mostly False	Definitely False
	1	2	3	4	5

a. I seem to get sick a little easier than other people.   sf11a (1 - 5)

b. I am as healthy as anybody I know.   sf11b (1 - 5)

c. I expect my health to get worse.   sf11c (1 - 5)

d. My health is excellent.   sf11d (1 - 5)

(new)

19. How satisfied are you with the way you are spending your life (check one)?
_1_Completely satisfied
_2_Mostly satisfied
_3_Moderately satisfied
_4_Not very satisfied
      spending_life (0-4)

Scoring:
These composite scores are computed if there are not too many missing values:
physical_functioning
role_physical
bodily_pain
general_health
vitality
social_functioning
role_emotional
mental_health

In the table in the database, for every sf36 field, there is a health status score field with an _hs appended to the name. For example, sf_1 has the associated health status score sf1_hs. These scores are assigned by a trigger on the table. In many cases the _hs values are the same as the raw values. The exceptions follow: (note if the raw value is missing there is no scored valued assigned.)

```
if :new.SF1 = 1 then
        :new.SF1_HS := 5.0;
elsif :new.SF1 = 2 then
        :new.SF1_HS := 4.4;
elsif :new.SF1 = 3 then
        :new.SF1_HS := 3.4;
elsif :new.SF1 = 4 then
        :new.SF1_HS := 2;
elsif :new.SF1 = 5 then
        :new.SF1_HS := 1;


:new.SF6_HS := 6 - :new.SF6;

if :new.SF7 = 1 then
        :new.SF7_HS := 6.0;
elsif :new.SF7 = 2 then
        :new.SF7_HS := 5.4;
elsif :new.SF7 = 3 then
        :new.SF7_HS := 4.2;
elsif :new.SF7 = 4 then
        :new.SF7_HS := 3.1;
elsif :new.SF7 = 5 then
        :new.SF7_HS := 2.2;
elsif :new.SF7 = 6 then
        :new.SF7_HS := 1;
end if;

if :new.SF8 = 1 then
    if (:new.SF7 = 1 or :new.SF7 is null) then
            :new.SF8_HS := 6.0;
    end if;
    if :new.SF7 > 1 then
            :new.SF8_HS := 5.0;
    end if;
elsif :new.SF8 = 2 then
    if (:new.SF7 is null) then
            :new.SF8_HS := 4.75;
    else
            :new.SF8_HS := 4;
    end if;
```

```
elsif :new.SF8 = 3 then
      if (:new.SF7 is null) then
            :new.SF8_HS := 3.5;
      else
            :new.SF8_HS := 3;
       end if;
elsif :new.SF8 = 4 then
        if (:new.SF7 is null) then
            :new.SF8_HS := 2.5;
        else
            :new.SF8_HS := 2;
        end if;
elsif :new.SF8 = 5 then
            :new.SF8_HS := 1;
end if;

:new.SF9A_HS := 7 - :new.SF9A;
new.SF9D_HS := 7 - :new.SF9D;

:new.SF9E_HS := 7 - :new.SF9E;
new.SF9H_HS := 7 - :new.SF9H;
new.SF11B_HS := 6 - :new.SF11B;
:new.SF11D_HS := 6 - :new.SF11D;
```

From the scores the following constructs are
computed:

Physical functioning:
is based on sf3a_h, sf3b_hs, sf3c_hs, sf3d_hs, sf3e_hs, sf3f_hs ,sf3g_hs ,sf3h_hs, sf3i_hs, sf3j_hs
Missing values are counted and the scores are summed and averaged. This is the logic to compute
the composite score:

```
valid_values := 10 - missing_values;
  if valid_values <= 4 then
     currscore := NULL;
  elsif valid_values > 4 and valid_values <= 9 then
     curravg := currsum / valid_values;
     currscore := ((currsum + (missing_values * curravg)) - 10) * 5;
  else
     currscore := (currsum - 10) * 5;
  end if;
 :new.PHYSICAL_FUNCTIONING := currscore;
end if;
```

Role_physical
is based on sf4a_hs, sf4b_hs, sf4c_hs, sf4d_hs
Missing values are counted and the scores are summed and averaged. This is the logic to compute
the composite score:

```
  valid_values := 4 - missing_values;
  if valid_values <= 1 then
     currscore := NULL;
  elsif valid_values > 1 and valid_values <= 3 then
     curravg := currsum / valid_values;
     currscore := ((currsum + (missing_values * curravg)) - 4) * 25;
  else
     currscore := (currsum - 4) * 25;
  end if;
 :new.ROLE_PHYSICAL := currscore;
```

Bodily_pain
is based on sf7_hs and sf8_hs .
Missing values are counted and the scores are summed and averaged. This is the logic to compute the composite score:
```
valid_values := 2 - missing_values;
  if valid_values = 0 then
     currscore := NULL;
  elsif valid_values = 1 then
     curravg := currsum / valid_values;
     currscore := ((currsum + (missing_values * curravg)) - 2) * 10;
  else
     currscore := (currsum - 2) * 10;
  end if;
  :new.BODILY_PAIN := currscore;
```

General_health
is based on sf1_hs, sf11a_hs, sf11b_hs, sf11c_hs, sf11d_hs
Missing values are counted and the scores are summed and averaged. This is the logic to compute the composite score:
```
valid_values := 5 - missing_values;
  if valid_values <= 2  then
     currscore := NULL;
  elsif valid_values > 2 and valid_values <= 4  then
     curravg := currsum / valid_values;
     currscore := ((currsum + (missing_values * curravg)) - 5) * 5;
  else
     currscore := (currsum - 5) * 5;
  end if;
  :new.GENERAL_HEALTH := currscore;
```

Vitality
is based on sf9a_hs, sf9e_hs, sf9i_hs
Missing values are counted and the scores are summed and averaged. This is the logic to compute the composite score:
```
  valid_values := 4 - missing_values;
  if valid_values <= 1 then
     currscore := NULL;
  elsif valid_values > 1 and valid_values <= 3 then
     curravg := currsum / valid_values;
     currscore := ((currsum + (missing_values * curravg)) - 4) * 5;
  else
     currscore := (currsum - 4) * 5;
  end if;
 :new.VITALITY := currscore;
```

Social_functioning
is based on sf6_hs, sf10_hs
Missing values are counted and the scores are summed and averaged. This is the logic to compute the composite score:
```
  valid_values := 2 - missing_values;
  if valid_values < 1 then
     currscore := NULL;
  elsif valid_values = 1 then
     curravg := currsum / valid_values;
     currscore := (((currsum + (missing_values * curravg)) - 2)/8) * 100;
  else
     currscore := ((currsum - 2)/8) * 100;
  end if;
  :new.SOCIAL_FUNCTIONING := currscore;
```

Role_emotional
is based on sf5a_hs, sf5b_hs, sf5c_hs.
Missing values are counted and the scores are summed and averaged. This is the logic to compute the composite score:

```
 valid_values := 3 - missing_values;
 if valid_values <= 1 then
    currscore := NULL;
 elsif valid_values = 2 then
    curravg := currsum / valid_values;
    currscore := (((currsum + (missing_values * curravg)) - 3)/3) * 100;
 else
    currscore := ((currsum - 3)/3) * 100;
 end if;
:new.ROLE_EMOTIONAL := currscore;
```

Mental_health is based on sf9b_hs, sf9c_hs, sf9d_hs, sf9f_hs, sf9h_hs
Missing values are counted and the scores are summed and averaged. This is the logic to compute the composite score:

```
 valid_values := 5 - missing_values;
 if valid_values <= 2 then
    currscore := NULL;
 elsif valid_values > 2 and valid_values <= 4  then
    curravg := currsum / valid_values;
    currscore := ((currsum + (missing_values * curravg)) - 5) * 4;
 else
    currscore := (currsum - 5) * 4;
 end if;
:new.MENTAL_HEALTH := currscore;
```