

SECTION 1. LABORATORY TESTS

QUESTION.1

What is your homocysteine level?

(Note: This is a laboratory blood test that requires an order by your health care provider)

This amino acid is an active co-factor in the production of the energy molecule ATP. It should be measured in conjunction with methylmalonic acid levels. Homocysteine can be affected by moderate-to-severe kidney disease, hypothyroidism, smoking, certain psychiatric and cancer drugs, and alcohol use. When elevated, this amino acid reflects an inherited or acquired problem with our cells using vitamin B9 (folate) and/or B12 to create ATP. Elevated homocysteine is an independent, and potentially reversible cause of dementia, and increases the risk of cardiovascular disease, as well as decreasing how easily blood vessels can dilate when there is a greater need for blood and oxygen. When high, homocysteine indicates decreased production of ATP. This condition is an independent risk factor for dementia.

check one	Answer	Outcome Statements	Model Instruction
<input type="checkbox"/>	Don't Know	Ask your HCP to order homocysteine and methylmalonic acid levels	DON'T KNOW
<input type="checkbox"/>	$\geq 10 \mu\text{mol/L}$	You are off target. Please speak to your HCP about ways to lower your homocysteine level	OFF TARGET
<input type="checkbox"/>	$\leq 10 \mu\text{mol/L}$	You are on target	ON TARGET

QUESTION.2

What is your Methylmalonic Acid level?

(Note: This is a laboratory blood test that requires an order by your health care provider)

This substance is an intermediate step in the production of ATP and the most sensitive test to determine the adequacy of vitamin B12. A deficiency in B12 is an independent cause of a potentially reversible dementia.

check one	Answer	Outcome Statements	Model Instruction
<input type="checkbox"/>	Don't Know	Ask your HCP to order homocysteine and methylmalonic acid levels	DON'T KNOW
<input type="checkbox"/>	$\geq 0.23 \mu\text{mol/L}$	You are off target. Please speak to your HCP about ways to lower your methylmalonic acid level	OFF TARGET
<input type="checkbox"/>	$\leq 0.23 \mu\text{mol/L}$	You are on target	ON TARGET

QUESTION.3
What is your Vitamin D-25 OH level?

(Note: This is a laboratory blood test that requires an order by your health care provider)

This test is the best indicator of vitamin D availability in our body. This vitamin is actually a hormone and has a powerful role in your immune status, and affects cognition, mood, energy, pain, and bone strength. While “normal” laboratory values can be as low as 25 ng/mL, target values for brain health are much higher.

check one	Answer	Outcome Statements	Model Instruction
<input type="checkbox"/>	Don't Know	Ask your HCP to order homocysteine and methylmalonic acid levels	DON'T KNOW
<input type="checkbox"/>	0-30 ng/mL	Ask your HCP about ways to increase your vitamin D level to a target of 50-70 ng/mL	OFF TARGET
<input type="checkbox"/>	31-49 ng/mL	Ask your HCP about ways to increase your vitamin D level to a target of 50-70 ng/mL	NEAR TARGET
<input type="checkbox"/>	50-70 ng/mL	You are on target	ON TARGET
<input type="checkbox"/>	≥71 ng/mL	Your Vitamin D may be too high. Please discuss with your HCP	OFF TARGET

QUESTION.4
What is your Total Cholesterol?

(Note: This is a laboratory blood test that requires an order by your health care provider. It is routinely tested and likely available in your medical record)

Cholesterol is a type of lipid, or fat, which is an essential part of all cells. Cholesterol is the raw material from which our body produces steroid hormones, like estrogen and testosterone, as well as the stress hormone, cortisol. High Density Lipoprotein (HDL) is often referred to as “good cholesterol” and is protective against cardiovascular and cerebrovascular disease. Low Density Lipoprotein (LDL) is often referred to as “bad cholesterol” and can cause cardiovascular and cerebrovascular disease. Cholesterol targets are different depending on a person’s age, health, and risk category and should not be viewed as absolutes.

check one	Answer	Outcome Statements	Model Instruction
<input type="checkbox"/>	Don't Know	Ask your HCP for your most recent HDL, LDL, and Triglyceride levels	DON'T KNOW
<input type="checkbox"/>	≥151 mg/dL	Please speak with your HCP to discuss if this is acceptable for your age, health and risk category	OFF TARGET
<input type="checkbox"/>	≤150 mg/dL	You are on target	ON TARGET

QUESTION.5
What is your High Density Cholesterol?

(Note: This is a laboratory blood test that requires an order by your health care provider. It is routinely tested and likely available in your medical record)

Cholesterol is a type of lipid, or fat, which is an essential part of all cells. Cholesterol is the raw material from which our body produces steroid hormones, like estrogen and testosterone, as well as the stress hormone, cortisol. High Density Lipoprotein (HDL) is often referred to as “good cholesterol” and is protective against cardiovascular and cerebrovascular disease.

check one	Answer	Outcome Statements	Model Instruction
<input type="checkbox"/>	Don't Know	Ask your HCP for your most recent HDL, LDL, and Triglyceride levels	DON'T KNOW
<input type="checkbox"/>	≤59 mg/dL	Please speak with your HCP to discuss if this is acceptable for your age, health and risk category	OFF TARGET
<input type="checkbox"/>	≥60 mg/dL	You are on target	ON TARGET

QUESTION.6
What is your Low Density Cholesterol?

(Note: This is a laboratory blood test that requires an order by your health care provider. It is routinely tested and likely available in your medical record)

Cholesterol is a type of lipid, or fat, which is an essential part of all cells. Cholesterol is the raw material from which our body produces steroid hormones, like estrogen and testosterone, as well as the stress hormone, cortisol. Low Density Lipoprotein (LDL) is often referred to as “bad cholesterol” and can cause cardiovascular and cerebrovascular disease.

check one	Answer	Outcome Statements	Model Instruction
<input type="checkbox"/>	Don't Know	Ask your HCP for your most recent HDL, LDL, and Triglyceride levels	DON'T KNOW
<input type="checkbox"/>	≥72 mg/dL	Please speak with your HCP to discuss if this is acceptable for your age, health and risk category	OFF TARGET
<input type="checkbox"/>	≤71 mg/dL	You are on target	ON TARGET

SECTION 2. DRUGS/MEDICATIONS

QUESTION 7

How high is your level of anticholinergic medication burden (ACB)?

 Check your score using an online ACB calculator, such as: <https://www.acbcalc.com/>

Anticholinergic medications block acetylcholine, an important neurotransmitter in your central and peripheral nervous systems and interfere with your brain working effectively. Acetylcholine levels decline as we age. People with Alzheimer’s disease, dementia associated with Parkinson’s Disease, vascular dementia, as well as other conditions, are known to have even lower amounts of acetylcholine in their brains. Consequently, preserving existing acetylcholine is a target for several dementia medications. However, many non-prescription sleep aids, allergy and cold preparations are very “anticholinergic.” They typically contain a class of drug called an “anti-histamine,” such as diphenhydramine (Benadryl). But while they are helping you sleep or drying up your runny nose, they are also depleting your brain of acetylcholine. In addition to the antihistamines, many prescription drugs have anticholinergic properties, including older “tricyclic” antidepressants and medications for urinary incontinence, Parkinson’s disease, COPD, and some GI conditions. The effects of these medications are cumulative, so that each one separately may not have such a great impact on acetylcholine levels, but the totality of them do. One goal of intervention is to reduce or “deprescribe” medications high in anticholinergic levels or find alternatives that do the same job but are less centrally anticholinergic and create less negative impact on your brain.

To measure your anticholinergic burden (ACB) you can follow this link to an online calculator (<https://www.acbcalc.com/>). You enter the name of each medication. If the name does not drop down from the menu, it has no anticholinergic effect. If the name appears, you click on it and see its severity-of-effect score from 1-3. Add up the scores to determine your Total ACB.

check one	Answer	Outcome Statements	Model Instruction
<input type="checkbox"/>	Don't Know	Use the ACB calculator and enter all prescription and nonprescription supplements/drugs	DON'T KNOW
<input type="checkbox"/>	I frequently take medications with anticholinergic properties and I have a high ACB score	Please speak with your HCP to discuss if this is acceptable for your age, health and risk category	OFF TARGET
<input type="checkbox"/>	I occasionally take a medication (for sleep, for a cold) with anticholinergic properties or have a moderate ACB score	Please speak with your HCP to discuss risks and benefits of prescribed medications, as well as availability of similar medications with lower ACB. Avoid frequent use of nonprescription sleep medicines with high ACB	NEAR TARGET
<input type="checkbox"/>	I rarely or never take a medication with anticholinergic properties or have a low ACB score	You are on target	ON TARGET

QUESTION.8

How often do you take prescribed benzodiazepine medications?

Benzodiazepines (BZ) are prescription drugs indicated for the treatment of anxiety, uncontrolled seizures of any cause, and alcohol withdrawal. Some prescription sleep medications also belong to this class. Common BZ's include Valium (diazepam), Librium (chlordiazepoxide), Xanax (alprazolam), Klonopin (clonazepam), Ativan (lorazepam) and Restoril (temazepam). This class of medications is habit-forming, and has high abuse potential, so that the longer someone uses it, the more they need to take in order to get the same desired effect. Long-term use of BZ's (more than 90 days) is known to cause cognitive impairment. If you are using this class of medication and want to discontinue it, you should only do so under the supervision of a health care provider. Do not stop a BZ "cold-turkey," as this can be dangerous.

check one	Answer	Outcome Statements	Model Instruction
<input type="checkbox"/>	Don't Know	Check the list of BZ medications in the Information section to see if you are currently taking medicines of this type	DON'T KNOW
<input type="checkbox"/>	I take a BZ every day or most days of the week and have for more than 90 days	Please speak with your prescriber to determine if you currently need this type, dose level, and frequency of medications and if there are alternatives. Do not discontinue your medication without your doctor's supervision	OFF TARGET
<input type="checkbox"/>	I take a small dose of a BZ a few times per week and not more 90 days or more	Please speak with your prescriber to determine if you currently need this type, dose level, and frequency of medications and if there are alternatives.	NEAR TARGET
<input type="checkbox"/>	I rarely or never use a BZ medication	You are on target	ON TARGET

SECTION 3. CARDIOVASCULAR AND BREATHING CONDITIONS

QUESTION.9

Do you have Type 2 diabetes or insulin resistance?

T2DM is a chronic medical condition that affects the way sugar (glucose) is metabolized by your body. When this condition is present, cells no longer have an effective response to insulin, the hormone that is needed to bring glucose inside cells to produce energy, or ATP. People with T2DM may actually be making more insulin than someone without the condition, but their cells are “resistant” to the effects of the hormone, which is why the earliest stages of this condition are referred to as “insulin resistance.” There is a genetic basis in over 70% of people who have this condition which decreases life span and increases risk of dementia. We measure the body’s response to insulin by checking the glycated hemoglobin in the blood, the HbA1c level. This represents an average of how “sugary” the red blood cells are over the past 90 days. Depending on your age and other health conditions, your doctor may have checked this in the last year. If not, now is a really good time, regardless of your age, gender, or weight.

check one	Answer	Outcome Statements	Model Instruction
<input type="checkbox"/>	Don't Know	Check your patient portal or ask your HCP if your Hemoglobin A1c level has been tested in the last year. If not, ask for a laboratory order to have this test performed.	DON'T KNOW
<input type="checkbox"/>	Even with medications, my HbA1c ≥ 6.5	Your Hemoglobin A1c level is statistically high. Please discuss with your HCP to determine if this is healthy for you and how you may be able to reduce this level.	OFF TARGET
<input type="checkbox"/>	Even with medications, my HbA1c is 5.7 to 6.5	Your Hemoglobin A1c level is statistically higher than ideal. Please discuss with your HCP to determine if this is healthy for you and how you may be able to reduce this level.	NEAR TARGET
<input type="checkbox"/>	My HbA1c falls between 4.5 and 5.6 and I am not currently diagnosed with T2DM	You are on target	ON TARGET

QUESTION 10

Do you have hypertension or high blood pressure?

Blood pressure is the pressure of circulating blood on the walls of blood vessels when your heart beats (systolic) and the pressure when your heart rests between beats (diastolic). It is measured using a blood pressure monitor on your upper arm or wrist. Your health provider has very likely recorded your blood pressure at one or more visits. You may be able to check this, as well as your lab reports, by going to your online records or by calling your provider's office. Be aware that different blood pressure devices can register different blood pressures on the same person, and that blood pressure varies by the physical position you are in, your activity level just before your pressure reading was taken, the time of day, and your anxiety level ("white coat syndrome"). If you are planning to take your blood pressure regularly, consider using the same automated cuff at the same pharmacy or grocery store each time, or consider buying one.

check one	Answer	Outcome Statements	Model Instruction
<input type="checkbox"/>	Don't Know	Check your patient portal or ask your HCP if what your most recent blood pressure readings have been. You can also take your blood pressure at many pharmacies or health clubs.	DON'T KNOW
<input type="checkbox"/>	Even with medication, my tested blood pressure is >130/>90	Your blood pressure is statistically high. Please discuss with your HCP. Make sure that you are taking your blood pressure medicines as prescribed.	OFF TARGET
<input type="checkbox"/>	Even with medication, my tested blood pressure is 121-129/81-89	Your blood pressure is higher than current medical advice suggests. If these values are consistently in this range, please discuss with your HCP.	NEAR TARGET
<input type="checkbox"/>	I have not been diagnosed with hypertension or I take medications that keep my tested blood pressure at 120/80 or below	You are on target (unless you have much lower numbers, in which case please discuss with your PCP)	ON TARGET

QUESTION.11

Do you have obstructive sleep apnea (OSA)?

Inadequate air flow to lungs while sleeping results in oxygen deprivation to your brain, called Obstructive Sleep Apnea (OSA). This is tested by an in-lab polysomnogram (PSG) or home sleep study, which monitors your breathing, heart rate, oxygen levels, and sometimes your brain waves. The study produces a score called the Apnea Hypopnea Index (AHI), the average number of times your brain is deprived of oxygen each hour while you sleep. Common symptoms include snoring, repeated awakenings to urinate (nocturia), awakening feeling tired, awakening with headaches, and dozing unintentionally when sitting or lying down. However, many people are unaware of their symptoms and the diagnosis is based on objective results from an overnight sleep test, not a survey of symptoms or bed partner report.

Sleep studies require an order or referral from a medical provider. You can start this conversation with your provider by reporting on your disrupted sleep, snoring, and nocturia. You can also download the STOP-Bang questionnaire, a brief screening test with 8 yes-no questions to give a rough idea of your risk of having OSA, but understand that this questionnaire misses the symptoms of nocturia and morning headaches.

check one	Answer	Outcome Statements	Model Instruction
<input type="checkbox"/>	Don't Know	If you snore, fall asleep while watching TV or reading, get up more than once per night to urinate, feel tired when you awaken, ask your HCP for a sleep study order	DON'T KNOW
<input type="checkbox"/>	I snore, use the bathroom several or more times per night, doze while reading, and wake up feeling tired. Or, I have a tested Apnea Hypopnea Index (AHI) ≥ 5.0	Your Apnea Hypopnea Index is 5 events per hour or more. You most likely have sleep apnea. If you have an AHI of 5 to 15, it is considered mild (but not insignificant). An AHI of 16-30 is moderate and AHI ≥ 30 is severe. Speak with your doctor about available treatments for all levels of OSA.	OFF TARGET
<input type="checkbox"/>	I snore, use the bathroom several or more times per night and have a tested AHI 4.0 to 4.9. I have been tested with mild OSA in the past.	Your Apnea Hypopnea Index is just below the level considered significant. Because AHI levels can vary from night to night and within each night, you may have clinically significant OSA if retested. In some cases, weight loss or reduction in alcohol will also reduce AHI.	NEAR TARGET
<input type="checkbox"/>	I sleep continuously, infrequently use the bathroom during the night, and wake up feeling refreshed. If tested, I have an AHI ≤ 4.0 .	You are on target.	ON TARGET
<input type="checkbox"/>	I have been diagnosed with (even mild) sleep apnea and I use my CPAP or other treatment consistently all night, every night	You are on target if you are using your apnea treatment regularly. If you are still experiencing 3-4 events per hour, speak with your sleep medicine doctor to see how you might achieve better results	ON TARGET

SECTION 4. HABIT AND LIFESTYLE PRACTICES

QUESTION.12

How much alcohol do you consume?

Take an honest look at your drinking habits. Remember that one drink is calculated as 12 ounces of 4.5% alcohol beer, 5 ounces of 12% alcohol wine, or 1.25 ounces (one shot) of 70 proof hard liquor. Many craft brews have a higher alcohol content and many lite beers are lighter in calories but not so different in alcohol content, so the math remains unchanged. One more thing: like many people you may pour liquor with a heavy hand and without using a shot glass, so make the adjustment in your calculations.

check one	Answer	Outcome Statements	Model Instruction
<input type="checkbox"/>	I am a woman and I drink 2 or more standard drinks per day on average, or I am a man and I drink 3 or more standard drinks per day on average, or I have episodes of binge drinking	Your current drinking levels are greater than those recommended for good brain health and very possibly for prevention of cancer and other diseases. If you are a problem drinker please discuss with your HCP and/or connect with this online government resource: https://www.niaaa.nih.gov/publications/brochures-and-fact-sheets/treatment-alcohol-problems-finding-and-getting-help	OFF TARGET
<input type="checkbox"/>	I am a woman and I drink 1 or fewer standard drinks per day on average, or I am a man and I drink 2 or fewer standard drinks per day on average	Your current drinking levels are on target. However, recent research suggests that less is better and that even one drink per day can result in greater cognitive problems in some individuals	ON TARGET

QUESTION.13

Do you smoke or vape tobacco products?

Smoking or vaping of tobacco products (4 mg eLiquid = 1 pack of cigarettes) is the standard measure. Smoking or vaping tobacco is associated with significantly higher risk for dementia, often due to the relationship with precursor conditions, such as hypertension.

check one	Answer	Outcome Statements	Model Instruction
<input type="checkbox"/>	Yes	Use of tobacco products, especially cigarettes, on a daily or frequent basis significantly increases in dementia risk as well as many other health problems. Please speak with your HCP about ways to quit. Here is a link to the Centers for Disease Control website regarding resources to quit smoking: https://www.cdc.gov/tobacco/quit_smoking/index.htm	OFF TARGET
<input type="checkbox"/>	NO	You are on target. If you are a former smoker, be aware that you are at risk for relapse and should not "dabble."	ON TARGET

QUESTION.14

Are you overweight? What is your body mass index (BMI)?

Obesity is a major driver of health problems that cause cognitive decline, including hypertension, type 2 diabetes, sleep apnea, and sedentary behavior. If you are overweight, especially in childhood and midlife, you have a potentially improvable condition that could have widespread effects on how you live and how you think in later life. We recommend that you calculate your Body Mass Index or BMI, using your current weight and height measurements. Although BMI is not a perfect measure, it is a good place to start. Follow this link to the free BMI calculator provided by the National Heart, Lung, and Blood Institute, a part of NIH:

https://www.nhlbi.nih.gov/health/educational/lose_wt/BMI/bmicalc.htm

check one	Answer	Outcome Statements	Model Instruction
<input type="checkbox"/>	My BMI is 30 or higher	Your BMI falls in the range considered as “obese.” Please talk to your HCP about all available options, including newer medications and surgery, to bring your weight into alignment with your height. Obesity is now being considered a disease rather than a failure of will or a personality problem. This may be the right time to investigate newer approaches.	OFF TARGET
<input type="checkbox"/>	My BMI is 25 to 29	You are overweight but near target. Please look at changes in your diet, exercise, and other habits that can bring your BMI under 25. Take a look at what you are eating, when you are eating and why you are eating. Set small and achievable goals and focus on the process of change.	OFF TARGET
<input type="checkbox"/>	My BMI is less than 18.5	Unless you are an elite athlete you are probably underweight. Surprisingly to some people, you actually can be too thin for your good health. Please look at changes in your diet, exercise and other habits or talk to your doctor or a nutritionist to see if there are improvable medical conditions.	NEAR TARGET
<input type="checkbox"/>	My BMI is 18.5 to 25	You are on target. You may still want to work on fitness goals however, since BMI does not measure strength, endurance, or even waist to hip ratio.	ON TARGET

QUESTION.15

How often and how much do you engage in cardiovascular exercise?

A 2022 study¹ found that 9800 steps per day cut dementia risk in half while just 3800 steps reduced risk by 25%. When you calculate your activity, count any type of moderate cardiovascular exercise that raises your heart rate. Include brisk walking, running, swimming, biking, tennis, yoga, and tai chi, as well as resistance or weight training. Sometimes stretching counts. Yardwork that is physically active can also qualify, but don't count sitting on your riding mower or playing golf if you ride in a cart.

Housework and gardening are always a question. For some people these can be a true workout, with a lot of physical activity, but for others a more sedentary and languorous approach that doesn't provide much benefit. When looking at exercise, pay attention to and record what you actually do, not what you did in the past, what you wish you did, or what you plan to do. You can download a pedometer calculator app for your cell phone to record your steps and distance. You can also use a device such as Fitbit.

1 del Pozo et al, Association of Daily Step Count and Intensity With Incident Dementia in 78 430 Adults Living in the UK. JAMA Neurol. 2022;79(10):1059–1063. doi:10.1001/jamaneurol.2022.2672

check one	Answer	Outcome Statements	Model Instruction
<input type="checkbox"/>	Rarely or never. I am primarily sedentary, do little to no walking, do only casual housework, or golf with a cart	You are doing too little regular exercise for your brain's benefit. Your brain wants you to do more. You can start by looking at our book chapters on how to make sustainable health behavior and habit changes. For many people, taking a 10-minute walk, three times per day is achievable and will take you to your goal. If pain or disability restricts your exercise, get a physical therapy evaluation or meet with a trainer who works with people experiencing limitations.	OFF TARGET
<input type="checkbox"/>	I get 20-30 minutes of moderate exercise most days, some weight or resistance training	You are near target. Please look at how you can fit a good level of exercise into your daily routine and avoid periods when you don't exercise.	NEAR TARGET
<input type="checkbox"/>	I get 30-60 minutes of moderate exercise per day, some weight or resistance training	You are on target. Keep up the good work. Watch out for overdoing and injuring yourself, because the time you spend healing and recovering will cost you the benefits you have gained.	ON TARGET

QUESTION.16

How well and how much do you sleep?

Sleep is important for health. Valuable metabolic, emotional and cognitive functions occur while we sleep. Insufficient sleep levels and quality are linked to hypertension, diabetes, obesity, heart attack, stroke, and depression, which all impact dementia risk. Too little sleep and fragmented sleep increase rates of all dementias. We now believe that the magic number for most adults is 7 hours, plus or minus 2 hours. Sleeping 5 hours or less interferes with removal of cellular byproducts or waste through the lymphatic system. People with insomnia also rely on medications that can reduce cognition. Sleeping 9 hours or more often reflects inefficient sleep, depression, loss of interest in usual activity, and an increase in sedentary behaviors.

check one	Answer	Outcome Statements	Model Instruction
<input type="checkbox"/>	I sleep less than 5 or more than 9 hours per night, have trouble falling or remaining asleep, have frequent nocturia, act out dreams, or wake up feeling tired.	Your sleep is a problem that deserves your attention. Please discuss with your doctor to rule out physical causes, including sleep apnea, restless leg syndrome. Look at your sleep habits, such as reading or watching videos in bed. If you drink alcohol, you may be waking up as the alcohol that made you feel sleepy is now arousing your brain as it leaves your system. Avoid nonprescription sleep aids. Consider cognitive behavioral therapy for insomnia (CBTI).	OFF TARGET
<input type="checkbox"/>	I sleep 5-6 hours per night, have occasional insomnia, have 0-1 episodes of nocturia, and awaken feeling refreshed most mornings	You are near target. You may need more sleep than you are currently getting. Take a look at your sleep habits or minimizing outside factors that interfere with receiving a full night's uninterrupted sleep.	NEAR TARGET
<input type="checkbox"/>	I sleep 7-9 hours per night, have very occasional trouble falling or staying asleep, have 0-1 episodes of nocturia, and usually feel refreshed when I awaken	You are on target. Pleasant dreams.	ON TARGET

QUESTION.17
How is your diet?

Everyone has different advice about diet. Results are inconclusive with respect to any particular food, or combination, or calorie count specifically preventing or delaying the onset of dementia. For a complete discussion, please refer to our chapter, and just keep in mind sugars, simple carbohydrates, and trans fats are really not good for anyone's brain.

check one	Answer	Outcome Statements	Model Instruction
<input type="checkbox"/>	I often eat fast foods or those that are highly processed. My diet is high in sugars and carbohydrates, low in vegetables and legumes	You are off target. Examine your choices and what leads you to choose foods that are likely to make weight control difficult and may deprive you of important nutrients. Consult a dietician and develop a plan.	OFF TARGET
<input type="checkbox"/>	I eat healthy foods episodically but go through periods when I eat fast foods or those that are highly processed	You are near target. Take a look at your eating habits. What are the factors that help you to stay on a healthy diet or lapse into unhealthier habits.	NEAR TARGET
<input type="checkbox"/>	I eat a diverse diet that includes olive oil, vegetables, and legumes. It is low in sugar and simple carbohydrates	You are on target. Keep up the good work. Take a look at how much you eat and when you eat because even a healthy diet can result in weight control problems if you eat too much, too often.	ON TARGET

QUESTION.18
Are you vaccinated for flu, pneumonia and COVID viral illnesses?

Research reported at the 2020 Alzheimer's Association International Conference showed a 17% dementia reduction in people with at least one flu vaccination, that more frequent vaccinations reduced risk by another 13% and pneumonia vaccination for people over 65 reduced risk by as much as 40%. Four studies in 2021 and 2022 demonstrated significantly higher rates of dementia following COVID infection, particularly in older patients who were hospitalized.

check one	Answer	Outcome Statements	Model Instruction
<input type="checkbox"/>	No. I don't vaccinate or take specific precautions against these illnesses.	You are placing yourself at heightened risk for dementia should you have a severe flu, pneumonia or COVID infection. We recommend that you discuss vaccination risks and benefits with your HCP	OFF TARGET
<input type="checkbox"/>	I receive some vaccinations and episodically pay attention to health policy advisories	Please explore the range of current vaccinations available to you, as well as advisories regarding masking, social distancing, hand washing, and other preventive measures.	NEAR TARGET
<input type="checkbox"/>	I receive most or all age-appropriate vaccinations and pay consistent attention to public health policy advisories	You are on target. Your brain and your friends and family thank you.	ON TARGET

QUESTION.19
Do you have regular dental hygiene?

Large scale meta-analysis¹ finds that periodontal disease, caused by *P. gingivalis* significantly increases the risk of dementia and represents an often overlooked prevention intervention.

1 Nadim R, Tang J, et al. Influence of periodontal disease on risk of dementia: a systematic literature review and a meta-analysis. Eur J Epidemiol. 2020 Sep;35(9):821-833. doi: 10.1007/s10654-020-00648-x. Epub 2020 Jun 12. PMID: 32533373.

check one	Answer	Outcome Statements	Model Instruction
<input type="checkbox"/>	No. I don't see a dentist regularly, do not brush or floss regularly, and/or have periodontal disease.	You are placing yourself at heightened risk for dementia. We urge you to have a dental examination and to brush and floss regularly. If your avoidance is caused by dental fear (dentophobia), please consider behavior therapies that can help you to overcome your fear.	OFF TARGET
<input type="checkbox"/>	I see a dentist regularly but I am not good at brushing and flossing to avoid periodontal disease.	You have made a good start by receiving regular dental care. We are sure that your dentist has counseled you to brush and floss. The question is how to make this a priority and a regular habit. Take a look at our chapters on behavior change.	NEAR TARGET
<input type="checkbox"/>	I see a dentist regularly, brush my teeth several times each day, and floss to avoid periodontal disease	You are on target. Your brain, your smile, and your breath thank you.	ON TARGET

QUESTION.20
Do you take precautions to prevent injuries?

Head injuries at any age, through auto accidents or sports injuries can result in increasing likelihood and earlier onset of dementia in older age. People over 75 have the highest rate of traumatic brain injury and account for a third of TBI hospitalizations. Even a hip fracture in a vulnerable older person can result in prolonged hospitalization, rehabilitative care, and a cascade of cognitive decline.

check one	Answer	Outcome Statements	Model Instruction
<input type="checkbox"/>	No. I don't wear a seatbelt or a helmet when on a bicycle, motorcycle, skateboard or skis. Even though I am unsteady, I won't use a cane or walker	You are placing yourself at heightened risk for dementia. Seatbelt use dramatically reduces risk of death and injury in an accident. Helmets improve survivability and reduce injury severity when cycling or in snow sports. Even though using a cane or walker may be embarrassing, the fact that you have been given a supportive device indicates that you are at higher risk for falling.	OFF TARGET
<input type="checkbox"/>	Sometimes I wear a seatbelt or a helmet when on a bicycle, motorcycle, skateboard or skis. Even though I am unsteady, I only use a cane or walker occasionally	You understand the risk of injury but have not made these prevention strategies part of your regular habit. The question is how to make this a priority and a regular habit. Take a look at our chapters on behavior change.	NEAR TARGET
<input type="checkbox"/>	I wear a seatbelt or a helmet when on a bicycle, motorcycle, skateboard or skis. I avoid risky sports and activities. I use a cane or walker if I am unsteady	You are on target. Your brain and your body thank you.	ON TARGET

SECTION 5. SOCIAL, EMOTIONAL, AND COGNITIVE FACTORS

QUESTION.21

How much mental stimulation are you getting?

While the evidence that computer brain games, crossword puzzles, making changes in overlearned habits (hold a fork in your nondominant hand), or changing your driving route to school or work do not have a major impact on preventing dementia, we believe that new challenges, activities, jobs, hobbies, or approaches to old habits can add some benefit to other brain preserving health changes. Interpersonal interactive activities, such as card games, group discussions, working with others on a project are better than reading, crossword puzzles, or other solo activities that are often not as challenging. You will want to lean toward doing things that require problem solving, thinking in new ways, and developing new skills. We want to emphasize new activities, new learning, new experiences and opportunities. "New" stretches the brain and creates new synapses, the connecting points between neurons that are the basis of your brain's ability to grow and stay young. You want to avoid periods of inactivity or repeating familiar and overlearned activities that keep you in a mental rut. Learn a new language, play a new musical instrument, try a new approach to a problem, start a hobby, take an online or in-person course, volunteer for a community-based event or activity. You may even want to take a part-time job, especially if you can develop or use a new skill.

check one	Answer	Outcome Statements	Model Instruction
<input type="checkbox"/>	I do very little and often am not engaged. I spend my time watching TV, napping, playing a game on my phone, "puttering" around the house, doing the same things in the same ways. I do not work and I have few or no hobbies	You are placing yourself at heightened risk for dementia and probably not enjoying your life very much. You may be experiencing depression and have lost the enjoyment of activity. If this is a possibility, please discuss with your HCP or pursue a mental health evaluation. If you have retired and had not planned for this extra time, some discussion with a counselor may also be valuable. In any case, "doing nothing" is a poor choice and one that you should reconsider.	OFF TARGET
<input type="checkbox"/>	I read, play games alone, assemble puzzles, knit or sew, work in my shop or on my car	At least you are keeping busy. That's a start. But you can "up your game" by adding some interactive elements. If you sew, consider a quilting group. If you do carpentry consider working on a project with others. Instead of just you and your computer or phone, why not play interactive games in person or online, such as mahjongg or cards.	NEAR TARGET
<input type="checkbox"/>	I am actively engaged in school, a job, or volunteering. I am learning new skills or a language, engaged in art, playing music, attending classes, part of a book club, or playing interactive games.	You are on target. Your brain thanks you and you are probably enjoying yourself.	ON TARGET

QUESTION.22

How socially involved am I?

Involvement in organizations, friendship groups, clubs, family activities, preferably with face-to-face involvement is important for mental health and dementia prevention. Ideally, physical contact is desirable, although virtual engagement may be a necessary alternative. Being married or in a long-term relationship helps, but don't do this just for dementia prevention.

check one	Answer	Outcome Statements	Model Instruction
<input type="checkbox"/>	I rarely see friends or only my immediate family. I live alone or, if I live with others, I spend most of my time by myself. I don't go to parties, religious activities, or social groups.	You are placing yourself at heightened risk for dementia and probably not enjoying your life very much. You may be experiencing depression and have lost the enjoyment of social activity. While some of your isolation may reflect the reality of losing friends and family to illness, death, or geographic relocation, such loss does not diminish the value of social contact for brain health. Consider this a time to begin interacting with others. A low-risk activity such as attending a few activities at a senior or adult life center can be a start. Also, look through your address book and call a few people you haven't spoken to in years. You may benefit from speaking to a counselor who can provide support.	OFF TARGET
<input type="checkbox"/>	I attend religious services or go to the senior center at times. I see friends or family occasionally. I own a pet who provides some companionship.	You have a starting point for improving your social connectedness. If you have a dog, consider taking it to a dog park where you might meet other dog owners. Make it a point to talk to others at church, synagogue or other religious location. Make a date for lunch with an old friend. Boost your social interaction level and look for ways to engage with others.	NEAR TARGET
<input type="checkbox"/>	I actively participate in organizations, clubs, and in social or religious groups. I make it a point to have regular contact with my friends and family. I am active and engaged on a regular and emotionally connected basis.	You are on target. Your brain thanks you. You are probably feeling a part of a greater community and have a positive future orientation. Social engagement at your level is also an ingredient in a longevity recipe.	ON TARGET

QUESTION.23
How is your mental health?

A subjective sense of well-being, feeling safe, being in control and able to make your own choices, maintaining an optimistic outlook, adapting to change and challenges, and dealing with loss are all critical to taking care of your brain. We know that chronic depression, stress overload, and pessimism increase the risk for cognitive decline. You may benefit from meditation, yoga, and other forms of self-care. Even if you've never considered it before, you may want to think about professional support, as in counseling or psychotherapy. Having an objective, outside person with whom you can share your concerns can make them more manageable and often just the process of putting feelings into words makes them easier to understand and manage. You may also benefit from psychotropic medication if you realize that what worked for you before isn't quite cutting it now.

check one	Answer	Outcome Statements	Model Instruction
<input type="checkbox"/>	I frequently feel anxious, worried, depressed, and out of control of my feelings and relationships. I have conflicted or traumatic relationships.	While occasional sadness, worry or anxiety is normal, you are at higher risk for cognitive decline if your emotional self is chronically upset. Anxiety and depression are tough to live with but are often amenable to treatment when approached in a comprehensive way. This could involve both psychotherapy and medications that will rebalance chemical levels in and between brain cells. Because depression and anxiety are biological, not illogical, in many people, "pulling myself out of it" may not work. Talk to your PCP about therapeutic approaches.	OFF TARGET
<input type="checkbox"/>	I occasionally feel anxious, worried and depressed. I would like to feel more in control. My relationships are okay but not as good as they could be.	We are glad that you have an awareness that your emotional self can benefit from some improvement. While chronic anxiety, depression and stress can interfere with cognitive functioning and increase the risk of dementia, you are rating yours as occasional. Because you have periods of better and worse emotional well-being, you have opportunities to analyze what is working and what is not, which gives you clues as to how to improve your emotional well-being. For many people, counseling can make this process easier and more effective. For others, it is time to make decisions and act on them.	NEAR TARGET
<input type="checkbox"/>	I feel content, optimistic, fulfilled, safe, and able to meet the challenges I face. I have strong relationships.	You are on target. That is excellent. Please recognize that your good emotional state may require your active nourishment of relationships and self-care.	ON TARGET

SECTION 6. SENSORY IMPAIRMENTS

QUESTION 24

How well can you hear?

Hearing loss, even at subtle levels, has emerged in the past few years as an important factor in dementia risk and part of a good prevention plan. Coincidental to this awareness the hearing aid industry has been deregulated, allowing people to obtain various grades of hearing aids without a doctor's prescription, even online. While deregulation can reduce cost and increase access, we are unaware of any research showing that nonprescription hearing amplification can have the same dementia prevention benefit as a test performed by a well-trained audiologist and hearing aids specific to your needs. We recommend being tested by an audiologist at a hospital, an ENT office, a university or VA medical center, or even one of the big-box wholesalers, like Costco and Sam's Club. If you have an objective hearing loss that can be improved by hearing aids, we urge you not to ignore this problem. Better hearing will often improve cognitive test scores, reduce the risk for dementia, and improve communication.

check one	Answer	Outcome Statements	Model Instruction
<input type="checkbox"/>	Don't know	Hearing loss often develops very gradually and you may be unaware of what you are missing. Don't assume that everyone else is mumbling or that your spouse or children are complaining for no reason. Get a test by a well-trained audiologist.	
<input type="checkbox"/>	I refuse to get a hearing test, or I had a hearing test but I will not get hearing aids, or I have hearing aids but won't wear them.	A number of recent research studies have demonstrated actual physical changes in the brains of those who have even subtle hearing loss, show that persistent hearing loss causes memory and cognitive decline, and that thinking improves when people correct their hearing loss. New hearing aids are very small and often undetectable. Hearing aid costs have gone down and are now more affordable. If you think that hearing aids make you look older, you probably are not fooling anyone. Do you need any other reasons?	OFF TARGET
<input type="checkbox"/>	I hear well in most situations but I have problems in crowded social situations, on the phone or in noisy environments. If I have hearing aids, I wear them only when going out or doing something important, rarely at home or alone.	If you hear reasonably well until there is interference from background noise, this may be a normal for aging phenomenon. However, it is not optimal and you still may benefit from hearing aids, particularly those that are adjustable for different environments. If you have hearing aids but treat them like the royal jewels, wearing them only for special occasions, your brain is not receiving full benefit. It is likely that our brains need the daily stimulation from background noises --- birds singing, refrigerator fans turning on, a TV in the other room --- in order to avoid atrophy or loss of volume in the auditory association cortex of the brain. We advise our patients who have hearing aids to put them in when they get up and take them out when they go to bed	NEAR TARGET
<input type="checkbox"/>	I hear very well with no suspicions, or I test as normal according to the audiologist, or I have cochlear implants or hearing aids that I wear regularly	You are on target. Your brain is getting the proper stimulation it needs for good thinking ability. Your biggest problem is explaining to your friend or spouse that you really can hear them, you just choose not to listen (just kidding).	ON TARGET

QUESTION.25

How well can you see?

Vision loss is an increasing problem related to aging. We encourage you to see an ophthalmologist, a medical doctor specializing in the eye, who can measure your visual acuity and also examine you for underlying visual changes that cause blindness and for which treatment is indicated. Such conditions include glaucoma, macular degeneration, and cataracts. Problems with our eye health are often related to underlying vascular factors and lack of oxygen. Decreased visual acuity, despite correction, is an independent risk factor for dementia.

check one	Answer	Outcome Statements	Model Instruction
<input type="checkbox"/>	Don't know	Visual decline can be subtle, through the deterioration of visual receptor cells or the growth of cataracts. You may recognize difficulty seeing while driving at night, but that might not be the entire picture. We encourage you to have an ophthalmological examination because you may not know what you are missing.	DON'T KNOW
<input type="checkbox"/>	I have poor vision and I know that I miss a lot, but I don't want to wear glasses or contact lenses, or I know that I have "ripe" cataracts but I do not want to have cataract surgery.	Your impaired vision may be one of the most easily corrected dementia risks that you have. Start by getting an ophthalmological examination and see what is wrong and what can be done. If your vision can be improved with glasses, you now have an affordable and proven way to improve your dementia risk. If the doctor diagnoses you with cataracts and recommends their removal, try to put aside your fears. Please appreciate that a 2022 study of more than 3000 people found that cataract removal was significantly associated with lower risk of dementia development. <small>1 Lee CS, et al. Association Between Cataract Extraction and Development of Dementia. JAMA Intern Med. 2022 Feb 1;182(2):134-141. doi: 10.1001/jamainternmed.2021.6990. PMID: 34870676; PMCID: PMC8649913.</small>	OFF TARGET
<input type="checkbox"/>	I have mild visual loss and I "get away" with wearing "cheaters" or I have glasses but don't wear them consistently	Here is a good opportunity to explore the reasons for your inconsistent or partial improvement of a dementia risk. Now that you know about the connection between visual loss and heightened dementia risk, you can revisit your approach to glasses or contact lenses.	NEAR TARGET
<input type="checkbox"/>	I have no visual loss or I have corrected my vision by wearing glasses or contact lenses consistently, had laser vision surgery, or had cataract removal.	You are on target. Your brain is getting the proper stimulation it needs for good thinking ability.	ON TARGET