Routine body check up and good health tips for elder person

Saptarshi Panigrahi¹, Somnath Surai², Hao Hong*¹, ³
¹, ³Department of Pharmacology, Key Laboratory of Neuropsychiatric Diseases, China Pharmaceutical University, Nanjing, China
²Department of Pharmaceutics, Key Laboratory of Natural Medicines, China Pharmaceutical University, Nanjing, China

Abstract
Routine health check-up can help to find problems early for better treatment and cure. Balanced diet and proper life style would keep our body running like a well-tuned engine, which would prevent diseases, suffering, morbidity and mortality in the long run. So it became customary for everyone to have a yearly check-up even if someone is feeling perfectly well.
The paper deals with routine physicals, screening tests, and good health tips for healthy & asymptomatic adults.

Keywords: BMI, echocardiogram, HbA1c, SGPT, PAP smear test, C-reactive protein

Introduction
- Visual Disorders: Glaucoma, Cataracts, Diabetes and Hypertension related eye disease.
- Dental Disorders: Gum disease, Dry mouth, Tooth decay, Plaque formation.
- Lung Disorders: Chronic obstructive pulmonary disease loss of lung volume. (COPD),
- Cardiovascular Disorders: Heart attacks, Conge peripheral artery disease, Constive heart failure, Irregular heart rhythm, Hypertension, Atherosclerosis.
- Gastrointestinal Disorders: Stomach ulcers, Colon inflammation orcolitis from infection or ischemic, dysphasia, constipation, bowel incontinence, hemorrhoids.
- Kidney Disorders: Kidney or renal disease from long standing diabetes and hypertension, Stone in kidney or gallbladder.
- Musculoskeletal Disorders: Osteoarthritis, Osteoporosis, and Gout.
- Hormonal Disorders: Diabetes, Menopause, Thyroid dysfunction.

Body weight and BMI test

Table 1: The body weight based on BMI values for adults. It is used for both men and women, age 18 or older [¹].

<table>
<thead>
<tr>
<th>Category</th>
<th>BMI range - kg/m²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severely underweight</td>
<td>&lt; 16.5</td>
</tr>
<tr>
<td>Underweight</td>
<td>16.5 - 18.5</td>
</tr>
<tr>
<td>Normal</td>
<td>18.5 - 25</td>
</tr>
<tr>
<td>Overweight</td>
<td>25 - 30</td>
</tr>
<tr>
<td>Obese Class I</td>
<td>30 - 35</td>
</tr>
<tr>
<td>Obese Class II</td>
<td>35 - 40</td>
</tr>
<tr>
<td>Obese Class III</td>
<td>&gt; 40</td>
</tr>
</tbody>
</table>

Eye Tests
Eyesight tends to deteriorate with age. Serious eye conditions such as Glaucoma, Cataracts, Diabetic retinopathy and macular degeneration are more common with age.

Eye pressures
Eye pressure testing (Tonometry) is one of the ways we watch for Glaucoma, a leading cause of blindness.

Visside vision
Visual field testing (measuring side vision) is another way we watch for Glaucoma.

Dilated retinal examination [²]
- By evaluating the eye’s natural lens, we can detect signs of cataracts.
- By looking for changes in the optic nerve, we may be able to tell if glaucoma is present.
- Damage to the eye’s arteries and veins (blood vessels) can give us clues about the presence of diabetes.

Slit lamp (microscope)
For Dry eyes, Eyelid disease etc other eye care.

Dental check up
Scaling and cleaning
Scaling and cleaning involves the removal of built-up debris from the teeth. This may include food particles, soft plaque or hard calculus.

Fissure sealants
Sealants protect teeth from decay.

LUNGS test
Breathing Tests [³](Spirometry)
This test measures how much air you can breathe in and out. It also measures how fast you can blow air out.
The test helps to detect diseases like asthma and COPD (Chronic Obstructive Pulmonary Disease). Pulmonary fibrosis (scarring of the lung tissue).

Lung Diffusion Capacity
This test measures how well oxygen passes from your lungs to your bloodstream.
Tests to Measure Oxygen Level
Pulse Oximetry and arterial blood gas tests show how much oxygen is in your blood.

Lung Volume Measurement
Body Plethysmography is a test that measures how much air is present in your lungs when you take a deep breath. It also measures how much air remains in your lungs after you breathe out fully. Spirometry can show whether you have: A blockage (obstruction) in your airways. This may be a sign of asthma, COPD (chronic obstructive pulmonary disease), or another obstructive lung disorder.

Cardiac Tests
Electrocardiogram (ECG or EKG) [4]
An electrical activity and show certain problems such as abnormal heartbeats or damage to the heart. Electrocardiogram (ECG or EKG) is a test that can record your heart’s electrical impulse.

Chest x-ray
A chest x-ray provides a picture of the lungs, heart, large arteries, ribs, and the diaphragm.

Blood pressure test
To check the blood pressure in sphygmomanometer. Normal blood pressure level is 120/80 mm Hg.

Echocardiogram
An Echocardiogram uses sound waves to create a moving picture of your heart. It provides information about the size and shape of your heart and how well your heart chambers and valves are functioning.

Heart rate
It is the speed of the heartbeat, specifically the number of heartbeats per unit of time. The normal adult human heart rate ranges from 60–100 bpm.

Pulse Rate
Older, and adults (including seniors): 60 - 100 beats per minute. Creatine phosphokinase-MB (CPK-MB) CPK-MB is a cardiac marker use to assist diagnoses of an acute myocardial infarction. The normal adult human range 5 to 25 IU/L.

Troponin a troponin test
Measures the levels troponin T or troponin I proteins in the blood. There proteins are released when the heart muscle has been damaged, such as occurs with the heart attack. The normal adult human range less than 0.01 ng/mL.

Blood Tests
A fasting glucose test that checks your blood sugar level to screen for diabetes. Normal blood sugar level is

Fasting blood glucose
- Less than or equal to 100 milligrams per deciliter (mg/dL)
- 2 hours after eating (postprandial)
- Less than 140 mg/dL (7.8 mmol/L) for people age 50 and younger;
- Less than 150 mg/dL (8.3 mmol/L) for people ages 50–60;
- Less than 160 mg/dL (8.9 mmol/L) for people age 60 and older.

HbA1c blood test [5]
HbA1c is a marker that can determine your average blood sugar (glucose) levels over the previous 3 months. [Range 4.5 % to 7.1%]

Lipid profile test
A fasting lipid panel to check your cholesterol and triglyceride levels.
- Normal level of cholesterol is not less than 130-250 mg/dL.
- Normal level of HDL is in between 50-60 mg/dL.
- Normal level of LDL cholesterol is lower than 100 mg/dL.
- Normal level of triglyceride is lower than 150 mg/dL

Haemogram [6-8]
A complete blood count (CBC) gives important information about the kinds and numbers of cells in the blood, especially red blood cells, white blood cells, and platelets. Normal range of WBC: 5,000–10,000 WBCs per cubic millimeter (mm3).
- Normal range of WBC cell types(differential)
- Neutrophils: 50%–62% Band neutrophils: 3%–6%
- Lymphocytes: 25%–40% Monocytes: 3%–7% Eosinophils: 0%–3%
- Normal range of RBC: 4.5–5.5 million RBCs per mcL.
- Normal range of Haemoglobin: 14–17.4 g/dL

<table>
<thead>
<tr>
<th>Liver Function Tests (LFT) [9-12]</th>
<th>Bilirubin Total</th>
<th>Conjugated (D. Bilirubin)</th>
<th>Unconjugated (ID Bilirubin)</th>
<th>Albumin</th>
<th>Globulin</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bilirubin is a reddish yellow pigment made during the normal breakdown of the RBCs. Levels of bilirubin increase in liver diseases, as well as in some conditions like gallstones. But in some cases of chronic liver illnesses like hepatitis.</td>
<td>Direct bilirubin is the more soluble, less toxic and conjugated with glucuronic acid.</td>
<td>Bilirubin that is bound to a certain protein (albumin) in the blood.</td>
<td>Albumin is produced in the liver and forms a large proportion of all plasma protein.</td>
<td>Globulin is group of proteins in blood, play an important role in liver function, fighting infection and blood clotting.</td>
</tr>
<tr>
<td></td>
<td>0-1 mg/dl</td>
<td>0-0.35 mg/dl</td>
<td>0.2-0.65 mg/dl</td>
<td>3.5-5 gm/dl</td>
<td>1.5 - 3.5 gm/dl</td>
</tr>
</tbody>
</table>
Kidney Test

Blood urea nitrogen (BUN) test\[^{13}\]

This test, which is used to evaluate kidney function, diagnose kidney problems. This test measuring the level of nitrogen in the urea of the blood.

- The normal range for this test is 7 to 20 mg/dL. Creatinine test Creatinine (Cr) forms when a substance found in muscle tissue breaks down. A high level of creatinine in the blood may indicate kidney damage caused by kidney infection, kidney stones, or decreased blood flow to the kidneys.
- The normal range for this test is 0.8 to 1.4 mg/dL. Calcium test This test, which measures the level of calcium in the blood, can be used to screen patients for kidney disease.
- The normal range for this test is 8.5 to 10.2 mg/dL.

<table>
<thead>
<tr>
<th>Hormones</th>
<th>Definition</th>
<th>Normal range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triiodothyronine (T(_3))</td>
<td>Abnormally high levels most commonly indicate a condition called Grave's disease. This is an autoimmune disorder associated with hyperthyroidism.</td>
<td>75-200 ng/dL</td>
</tr>
<tr>
<td>Thyroxine (T(_4))</td>
<td>A high level of T(_4) indicates an overactive thyroid (hyperthyroidism). Symptoms include anxiety, unexplained weight loss, tremors, and diarrhea.</td>
<td>4.5-11.5 ug/dL</td>
</tr>
<tr>
<td>Thyroid Stimulating Hormone (TSH)</td>
<td>TSH is a pituitary hormone that stimulates the thyroid gland to produce (T(_3)) and then (T(_4)) which stimulates the metabolism of almost every tissue in the body</td>
<td>0.3-5 U/mL</td>
</tr>
</tbody>
</table>

Test for women\[^{20}\]

Breast test

Mammography

It is the process of using low-energy x-rays (usual around 30 kVp) to examine the women breast and it use as a diagnostic and a screening tool.

Abdomen test

Ultrasonography

Above 40 women, suffer uterine cyst, so to check it Ultrasonography is used.

PAP smear test

It is a method of cervical screening used to detect potentially pre-cancerous and cancerous processes in the endocervical canal.

<table>
<thead>
<tr>
<th>Rheumatoid factor (RA)</th>
<th>Rheumatoid factor are proteins produced by our immune system that can attack healthy tissue in our body.</th>
<th>Less than 15 IU/ml</th>
</tr>
</thead>
<tbody>
<tr>
<td>C- reactive protein</td>
<td>Widely inflammation. Means, it measures a substance produced by the liver that increases in the presence of inflammation.</td>
<td>Below 3.0 mg/dL</td>
</tr>
<tr>
<td>HLA-B27</td>
<td>Human leukocyte antigen B27 is a major histocompatibility complex class I molecule that is strongly associated with the disease Ankylosing Spondylitis.</td>
<td>Positive/ Negative</td>
</tr>
<tr>
<td>Antinuclear antibody (ANA)</td>
<td>It detects antinuclear antibodies (ANA) in our blood. Our immune system normally makes antibodies to help fight infection.</td>
<td>Positive/ Negative</td>
</tr>
<tr>
<td>Anti-cyclic citrullinated peptide (anti-CCP)</td>
<td>Anti-cyclic citrullinated peptide (anti-CCP) is an antibody present in most rheumatoid arthritis patients.</td>
<td>Less than 20 U/ml</td>
</tr>
</tbody>
</table>
Conclusion
Go for routine health check-up & balanced diet for keep your smile healthy

Good Health Tip
- Balanced diet
- Regular Exercise, Walking & Jogging
- Routine screening tests
- Preventive measures
- Tension free mind
- Early to bed at night
- Early morning Rise
- Keep smiling always

Conflict of interest
The authors declare no conflict of interest.

References