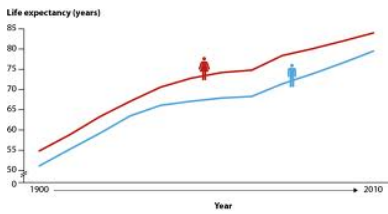





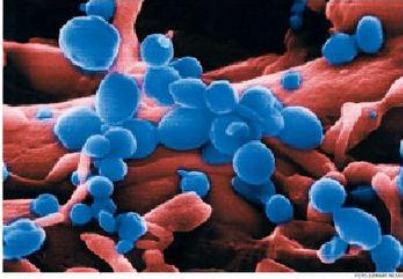
**Australian Society for Medical Research**  
**Medical Research Week®**  
**Schools Quiz 2014**

*Answers are shown in gold highlighting*

<b>Ageing</b>	
<p>1.</p> 	<p>In Australia, a female born in 2010 would be expected to live until:</p> <ul style="list-style-type: none"> <li>a. 76 years</li> <li>b. 80 years</li> <li><b>c. 84 years</b></li> <li>d. 88 years</li> </ul>
<p>2.</p> 	<p>Which of the following is true about sarcopenia?</p> <ul style="list-style-type: none"> <li>a. sarcopenia is the age-related loss of muscle mass and function</li> <li>b. sarcopenia is more common in men than women</li> <li>c. good nutrition and exercise can help prevent sarcopenia</li> <li>d. a &amp; b are true</li> <li><b>e. a &amp; c are true</b></li> </ul>
<p>3.</p> 	<p>Grey hair is mainly due to:</p> <ul style="list-style-type: none"> <li>a. using chemical hair colours</li> <li><b>b. lack of melanin in the hair follicle</b></li> <li>c. not eating enough fruit</li> <li>d. stress</li> </ul>
<p>4.</p> 	<p>Risk factors for osteoporosis include</p> <ul style="list-style-type: none"> <li>a. low calcium, low vitamin D</li> <li>b. family history, low calcium, low vitamin D</li> <li><b>c. family history, low calcium, low vitamin D, smoking</b></li> <li>d. none of the above are correct</li> </ul>

## Immunity and Infection

5.



What type of organisms do polio and measles vaccinations protect against?

- a. bacteria
- b. viruses**
- c. protozoa
- d. fungi

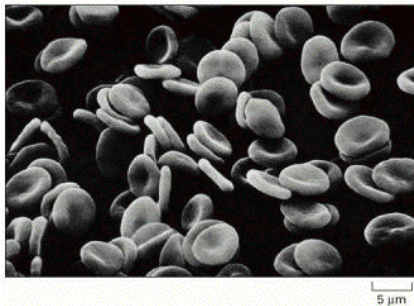
6.



A developing fetus acquires immunity from its mother through (blank) allowing the transfer of (blank) through the placenta.

- a. Active immunity, IgG antibodies
- b. Passive immunity, IgM antibodies
- c. Active immunity, IgM antibodies
- d. Passive immunity, IgG antibodies**

7.



Which of the blood immune cells are responsible for combating multicellular parasites?

- a. eosinophils**
- b. basophils
- c. neutrophils
- d. monocytes

## Mental Health

8.



What are the three most common mental health problems in Australian citizens?



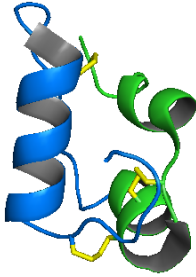

- a. Anxiety, depression, substance abuse**
- b. Bipolar disorder, depression and schizophrenia
- c. Substance abuse, autism and schizophrenia
- d. Bipolar disorder, personality disorders, post-traumatic stress syndrome.

9.



Which factor may indicate poor mental health

- a. Playing team sports
- b. Eating healthy food
- c. Being unable to sleep**
- d. Spending time with friends

<p>10.</p> 	<p>When does a person need help for computer game addiction?</p> <ol style="list-style-type: none"> <li>If they feel happy when they are playing but depressed when they log off</li> <li>They think about gaming when they are supposed to be thinking about other things e.g. homework</li> <li>They spend more time on-line than playing with their friends</li> <li><b>All of the above</b></li> </ol>
<p><b>Obesity</b></p>	
<p>11.</p> 	<p>Metabolic syndrome is:</p> <ol style="list-style-type: none"> <li>A disease of the brain</li> <li>A number of immune deficiency conditions</li> <li><b>Disorder of energy storage and utilisation in the body</b></li> <li>A form of malaria</li> </ol>
<p>12.</p> 	<p>In which decade was Insulin discovered?</p> <ol style="list-style-type: none"> <li>1990s</li> <li><b>1920s</b></li> <li>1930s</li> <li>1960s</li> </ol>
<p>13.</p> 	<p>Insulin helps in glucose transport by</p> <ol style="list-style-type: none"> <li>Taking glucose directly to cells</li> <li><b>Make GLUT-4 glucose transporter available for glucose transport</b></li> <li>Reducing the amount of available glucagon</li> <li>Converting glucose to ATP</li> </ol>

## Sports Medicine

14.



The human skeleton is the internal framework of the body. It consists of approximately 300 to 350 bones at birth and this number decreases by adulthood as some bones fuse together. What is the number of bones in a typical adult?

- a. 404
- b. 125
- c. 206
- d. 82

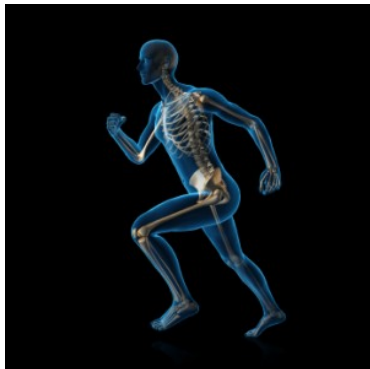
15.



In 2011, *TIME* magazine named Prof. Hugh Herr as the “Leader of the Bionic Age” because of his revolutionary work. A double amputee himself, he is responsible for breakthrough advances in bionic limbs that provide greater mobility and new hope to those with physical disabilities. What is the name of the world’s first bionic foot and calf system he helped develop?

- a. R2D2
- b. Cochlear implant
- c. BiOM
- d. Bionic eye

16.



Which of the following is the study of the structure and function of biological systems when subjected to forces or displacements. It incorporates techniques and applications from physics, human anatomy, mathematics, computing and engineering to prevent injury and to improve performance.




- a. Biomechanics
- b. Nanotechnology
- c. Mechatronics
- d. Bioinformatics

17.



Jumper's knee commonly occurs in athletes who are involved in jumping sports such as basketball. What medical term appropriately describes this condition?

- a. Iliotibial band syndrome
- b. Plica syndrome
- c. Spondylolisthesis
- d. Patellar tendinitis

Tropical Diseases	
<p>18.</p>  <p>Global Distribution of Tropical Diseases</p>	<p>Infectious diseases account for approximately ___ % of deaths in tropical areas of the world</p> <ul style="list-style-type: none"> <li>a. 50%</li> <li>b. 30%</li> <li>c. 80%</li> <li>d. &lt; 10%</li> </ul>
<p>19.</p> 	<p>Malaria is caused by:</p> <ul style="list-style-type: none"> <li>a. Mosquitos</li> <li>b. <i>E. coli</i></li> <li>c. Parasites</li> <li>d. Heat stroke</li> </ul>
<p>20.</p> 	<p>Which of these statements is true about Dengue fever?</p> <ul style="list-style-type: none"> <li>a. It is a virus transmitted by mosquitoes</li> <li>b. It has short incubation period</li> <li>c. It is particularly common in travellers to Southeast Asia</li> <li>d. All of the above</li> </ul>

**Bonus question:**

In 25 words or less, describe what you think is the most significant contribution Australian researchers have made to health and medical research, and why?