

科学就是力量

知识就是财富

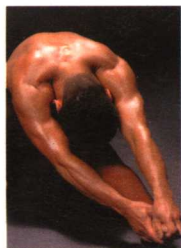
Human Body

人体卷

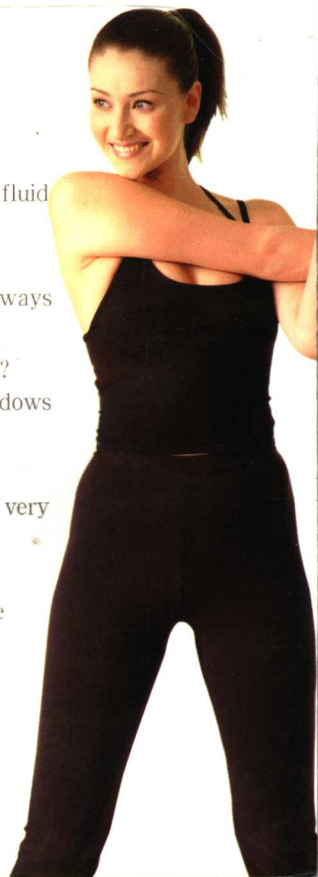
双语 十万个为什么

BILINGUAL SO MANY WHY

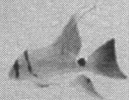
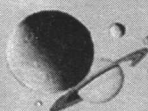
► 主编 / 谢志敏 ◀



- Why to say blood is the fluid of life?
- 为什么说血液是生命之源?
- Why big brains aren't always so clever?
- 为什么头脑大并不一定聪明?
- Why to say eyes are windows on the body?
- 为什么说眼睛是人体之窗?
- Why is the human brain very miraculous?
- 为什么人的大脑很神奇?
- Why do many people like tattoos?
- 为什么许多人喜欢纹身?



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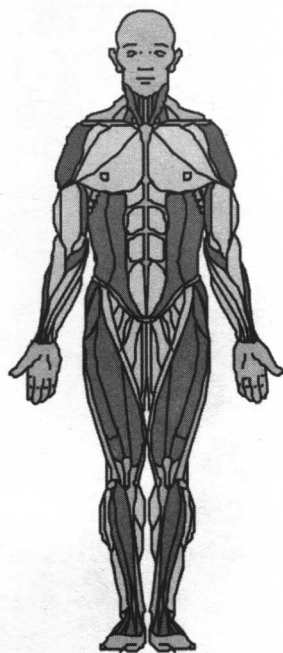
❀ 双语 ❀

十万个为什么

DOUBLE LANGUAGE
SO MANY WHY

人 体

□主编 / 谢志敏



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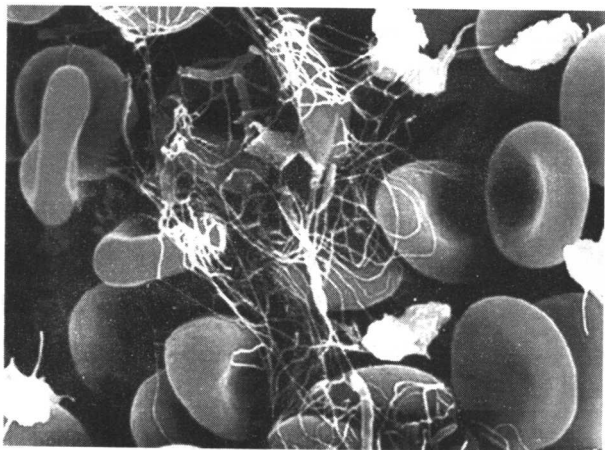




Why To Say Blood Is The Fluid Of Life

为什么说血液是生命之源？

The average adult has about five liters of blood living inside of their body. It flows rapidly through their vessels, delivers essential elements, and removes harmful wastes. Without blood, the human body would stop working.

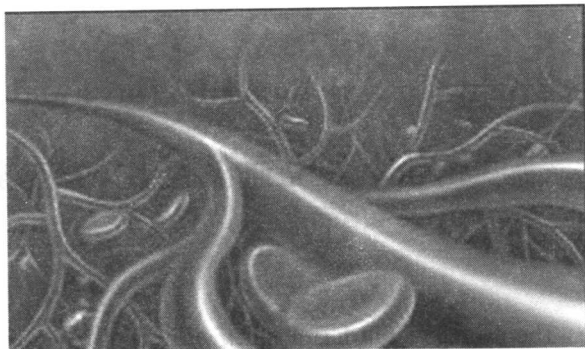


普通成年人的体内大约有5升的鲜血。它们在血管内快速流动,运送重要的物质,清理有害的废物。没有血液,人体将停止工作。

Blood is the fluid of life, which transports oxygen from the lungs to body tissue and carbon dioxide from body tissue to the lungs. Blood is the fluid of growth, which transports nourishment from digestion and hormones from glands throughout the body. Blood is the fluid of health, which transports disease fighting substances to the tissue and waste to the kidneys.



血液是生命之源,它将氧从肺运送到体组织,将二氧化碳从体组织运送到肺;血液是生长之源,它将消化系统的营养物质和腺体的激素运送到全身;血液还是健康之源,它将抗病物质运送到体组织,将废物运送到肾脏。



Red blood cells and white blood cells are responsible for nourishing and cleansing the body. Since the cells are alive, they too need nourishment. Vitamins and minerals keep the blood healthy. The blood cells have a definite life cycle, just as all living beings do.



血液红细胞和白细胞负责供给身体营养和清理体内的垃圾。由于这些细胞是活的,它们也需要营养物质。维生素和矿物质可以保持血液健康。血细胞像所有的生命物质一样,它们也有一个固定的生命周期。

Nearly 55 percent of blood is plasma, a yellowish clear liquid. The liquid plasma carries the solid cells and the platelets which help blood clot. Without blood platelets,

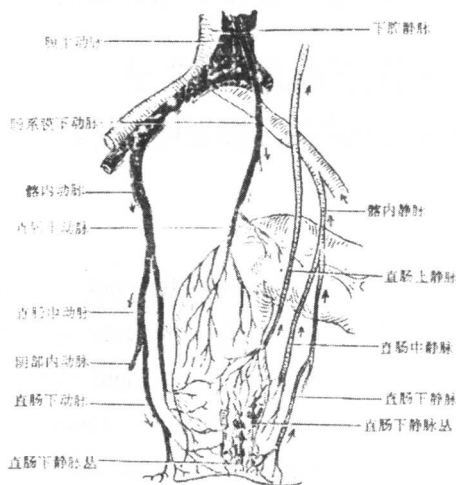
you would bleed to death.



血液中近 55% 是血浆——一种黄色透明的液体。这种液体血浆载着固体的细胞和血小板,血小板可帮助血液凝固。如果没有血小板,人将流血致死。

When the human body loses a little bit of blood through a minor

wound, the platelets cause the blood to clot so that the bleeding stops. Because new blood is always being made inside of your bones, the body can replace the lost blood. When the human body loses a lot of blood through a major wound, that blood has to be re-



placed through a blood transfusion from other people.

当人体由于一个小的创伤损失少量血液时,血小板促使血液凝固,这样流血就停止了。因为人的骨骼内一直在制造新的血液,所以人体能够补偿损失的血液。当人体由于受重伤而大量失血时,损失的一部分血液必须通过其他人的输血才能得到补偿。

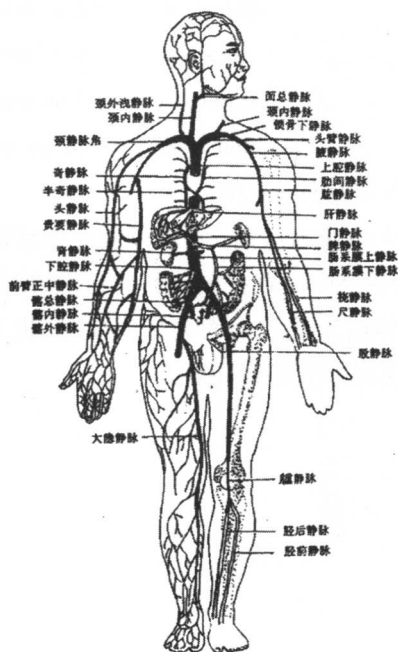


Why Does Blood Look Blue Under The Skin, Yet We Go Red When We Blush

为什么在皮肤下血液一般呈 蓝色,而我们害羞的时候,脸却会发红?

Surprisingly, the reason blood in our veins looks blue only emerged, following research by physicist Dr Lothar Lilge and colleagues at the On-

tario Laser and Light Wave Research Centre Canada. They showed that when light strikes white skin, the longer, redder wavelengths penetrate deeper, and are absorbed by the blood vessels. As a result the light reflected back from the skin over a blood vessel has a relatively-higher proportion of the shorter wavelengths which gives it a blue purple tinge. The veins of people with dark skin don't show this effect so strongly because the skin's melanin absorbs almost all

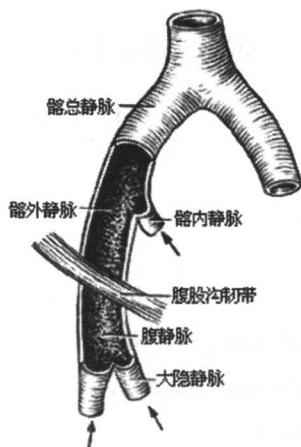




wavelengths of light at the skin's surface. The reason we go red rather than blue when we blush is because of the relative depths of blood vessels. According to Dr Lilge a vein has to be at least 0.5 mm below the skin's surface to look blue. The small capillaries that fill up with blood when we blush are much closer than that to the surface so look red.

让人惊讶的是,根据加拿大安大略激光和光波研究中心的物理学家洛塔尔·里尔奇博士与其同事的研究,人们得到了为什么我们静脉中的血液看上去呈蓝色的解释。他们指出,当光线照射到

白色的皮肤时,波长较长的偏红色光波穿透得较深,并且被血管吸收。结果,被血管上方皮肤反射回来的光线中波长较短的光线比例



就高一些,这部分光线使血管呈现蓝紫色色调。黑肤色的人的静脉不大能显出这一效果,因为其皮肤中的黑色素在皮肤表面就吸收了几乎所有波长的光线。我们害羞时脸会变红而不变蓝的原因是由于血管的相对深度造成的。根据里尔奇博士的研究,血管必须在皮肤表面以下至少 0.5 毫

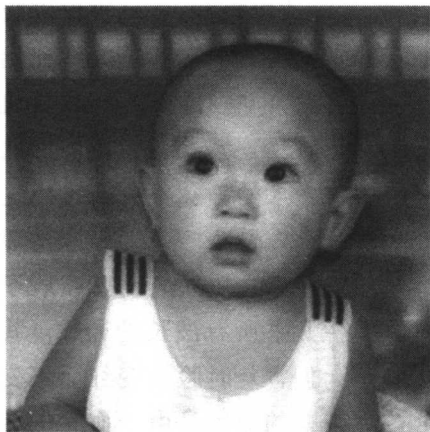
米,才会显出蓝色。而我们害羞时充血的那些小毛细血管离皮肤表层要近得多,因此使皮肤看上去发红。



Why Big Brains Aren' t Always So Clever

为什么头脑大并不一定聪明？

Big brains have not necessarily evolved just to make animals more intelligent, according to British researchers. The size of a mammal' s brain ,may simply reflect the sensory systems it needs to pursue its chosen lifestyle.



根据英国研究人员的报告,体积大的脑的进化不一定使动物更聪明。哺乳动物脑的大小,仅仅反映了它为实现自己所选择的生活方式而需要的感觉系统不同罢了。

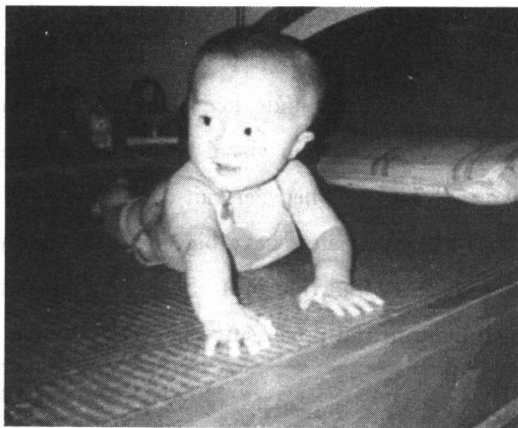
Robert Barton of the University of Durham, working with Andrew Purvis and Paul Harvey of the University of Oxford, has

completed a survey of the brains of 132 species of primates, bats and insectivores. Previously, most researchers studying brain evolution have measure the overall size of the brain relative to the body—often assuming that larger brains mean higher intel ligence. Barton and his colleagues suspected that this was not the whole story, and set out to look at the

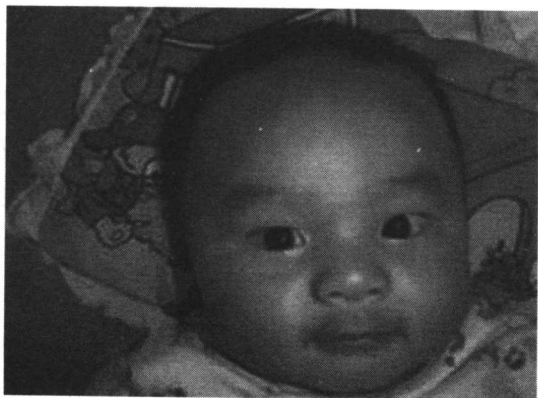


brain's sensory subsystems, relating these to the mammals' lifestyles.

达勒姆大学的罗伯特·巴顿与牛津大学的安德鲁·珀韦斯和保尔·哈卫一起合作,完成了一项对 132 个种类的灵长动物、蝙蝠和食虫动物的调查研究。以前,大多数研究脑进化的研究工作者测定脑在身体中所占的总体积,常常认为脑大一些,智力就高一些。巴顿和他的同事们怀疑,认为问题并非完全如此。他们开始研究大脑的感觉亚系统,将它们与哺乳动物的生活方式联系起来。



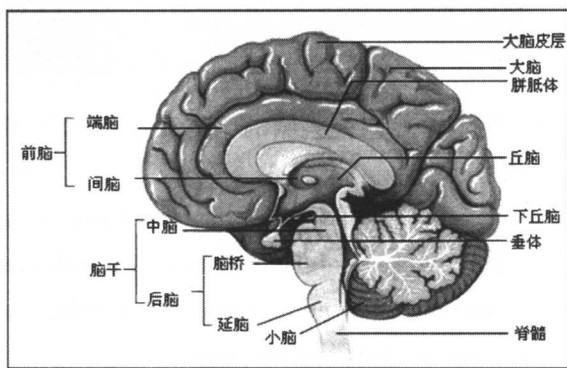
Several general trends emerged. For example, they found that in animals that are active in daylight the parts of the brain that deal with eye-sight are more highly developed than they are in nocturnal animals, and those dealing with sense of smell are less well developed.



几种普遍性倾向初露头角。例如,他们发现白天活动的动物处理眼睛光信号的那部分脑,要比夜间活动动物那部分脑更为发达,而那些处理味觉的部分却不那么发达。



The study has already thrown into questions some theories about brain evolution, Biologists had previously thought, for example, that fruit-eating primates had larger brains than their leaf-eating relatives because they needed to be especially bright to find patchily distributed fruit trees. But the new study had shown that differences in the size of the brain areas involved in visual processing account for most of the difference in brain size between fruit-eating and leaf-eating primates. Barton argues that fruit eaters have bigger brains simply because they need good color vision to find ripe fruit. Seeing in color, he believes, may require much more neural processing than monochrome vision.



这项研究对有关脑进化的某些理论产生了质疑。例如,生物学家们以前一直认为食水果的灵长类动物比它们的近亲食叶动物的脑要大,因为它们

需要特别明亮的眼睛来发现零星分布的水果树。但新的发现表明,负责视觉信号处理的脑区大小不同,解释了食水果与食叶的灵长动物脑体积大小的主要差异。巴顿认为,食水果动物的脑大一些,仅仅因为它们需要好的色觉来发现成熟的水果。他深信,彩色视觉可能比单色视觉需要更多的脑神经来处理。



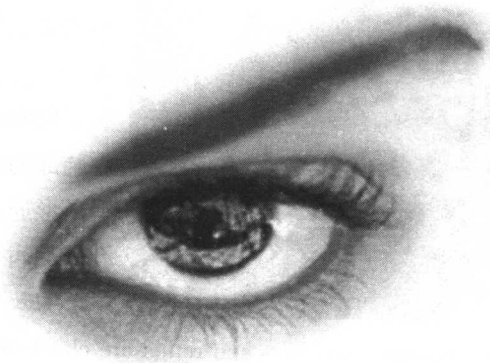
Why To Say Eyes Are Windows On The Body 为什么说眼睛是人体之窗？

Your eye is a window on the nerves and blood vessels, revealing vital information about your entire body.



人的眼睛是神经和血管的窗口,透露出有关整个人体的极其重要的信息。

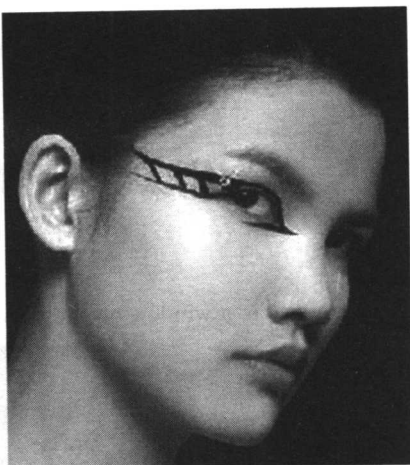
First the ophthalmologist gauges vision with the familiar wall chart and checks visual field by moving objects in and out of range. A limited visual field could be the result of the high inner eye pressure of glaucoma or of a tumor pressing on nerves leading from the eye. The physician also





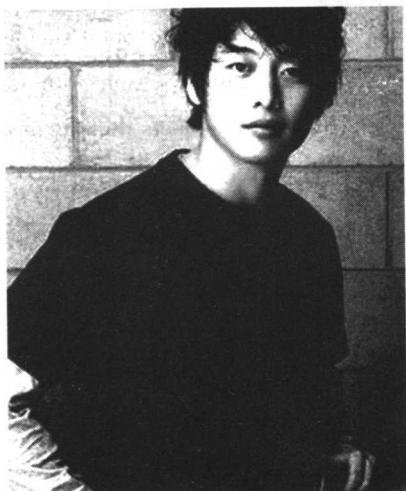
checks for infection around the lashes and notes how fast the lids follow the eyes downward. Lid lag sometimes indicates thyroid disease.

首先眼科医生使用人们熟知的挂图视力表测试视力,并通过将物体移进和移出视力范围检验视野。视野受限制可能是青光眼的眼球内压高所致,或是因肿瘤压迫眼输出神经的结果。内科医生也要检查眼睛,看眼睑周围有无感染,并观察眼睑随眼睛向下移动的速度如何。眼睑滞后有时表现患有甲状腺疾病。



If one pupil contracts but the other doesn't, the physician is alerted to the fact that something—a tumor or stroke, perhaps—has damaged the nerves between the eye and brain. A tumor as far away as the lung can

cause pupillary problems by hitting a nerve that loops through the neck.



如果一个瞳孔收缩而另一个不收缩,这就提醒医生,某种病症——可能是肿瘤或中风——损害了眼和脑之间的神经。一个远在肺部的肿瘤有可能因碰到一根呈环形通过颈部的神经而引起瞳孔的毛病。

The white of the eye, tear ducts, cornea, iris, lens and retina are checked for signs of trouble. Too