

## Human Limits Zone, June 2013



This report has been compiled by the I'm a Scientist team as a summary, containing moderator observations and our web data, to provide some meaningful information on the zone.

The Human Limits Zone started off busy during the first week, but became quieter in the second week. Four of the scientists answered questions and took part in live chats, but Luca didn't take part and was voted off first.

### Number of page views in the 3 weeks surrounding the event

| Zone page       | Page views |
|-----------------|------------|
| Total zone      | 20,542     |
| ASK page        | 1,947      |
| CHAT page       | 2,553      |
| VOTE page       | 1,473      |
| Luca Angius     | 739        |
| Liam Bagley     | 1,262      |
| Emma Ross       | 873        |
| Damian Bailey   | 714        |
| Alan Richardson | 1,095      |

### Key figures from I'm a Scientist June 2013 for the zone, the average of all 18 zones, and the whole event

|  | Zone  | Zones average | Whole event |
|--|-------|---------------|-------------|
| Registered students                                      | 394   | 372           | 6,697       |
| % of active students (used ASK, CHAT, VOTE or commented) | 87%   | 83%           | -           |
| Questions asked  | 595   | 963           | 17,337      |
| Questions approved                                       | 318   | 309           | 5,558       |
| Answers given  | 248   | 533           | 9,597       |
| Comments   | 62    | 73            | 1,306       |
| Votes  | 327   | 276           | 4,962       |
| Live chats   | 16    | 13            | 240         |
| Lines of live chat                                       | 4,854 | 4,735         | 85,225      |
| Schools  | 9     | 8             | 138         |

### **Popular topics**

Questions on the zone theme, human limits, were very popular, with extreme temperature being a particularly prevalent topic. Students asked about the limits of the human body, from how hot or cold the body can get before it shuts down, to how far we could dive underwater without breathing.

Similar topics came up again and again both in the chats and in the questions. The effects of altitude on the body, why and how our bodies age, and how adrenaline works were just a few key subjects often asked about.

#### **Sample questions**

[What is the hottest and coldest climate a human could survive in?](#)

[Why do we see stars when we push ourselves too much?](#)

[Do we have the same amount of air in us when we do exercise as we do when we sleep?](#)

[Why are we less active when we are old?](#)

[Would it be possible to build inside mount Everest?](#)

[Do you think that in 200-300 years' time that computers will be able to function as well as the human brain does now?](#)

[Do we create muscles when doing exercise or do we build them up?](#)

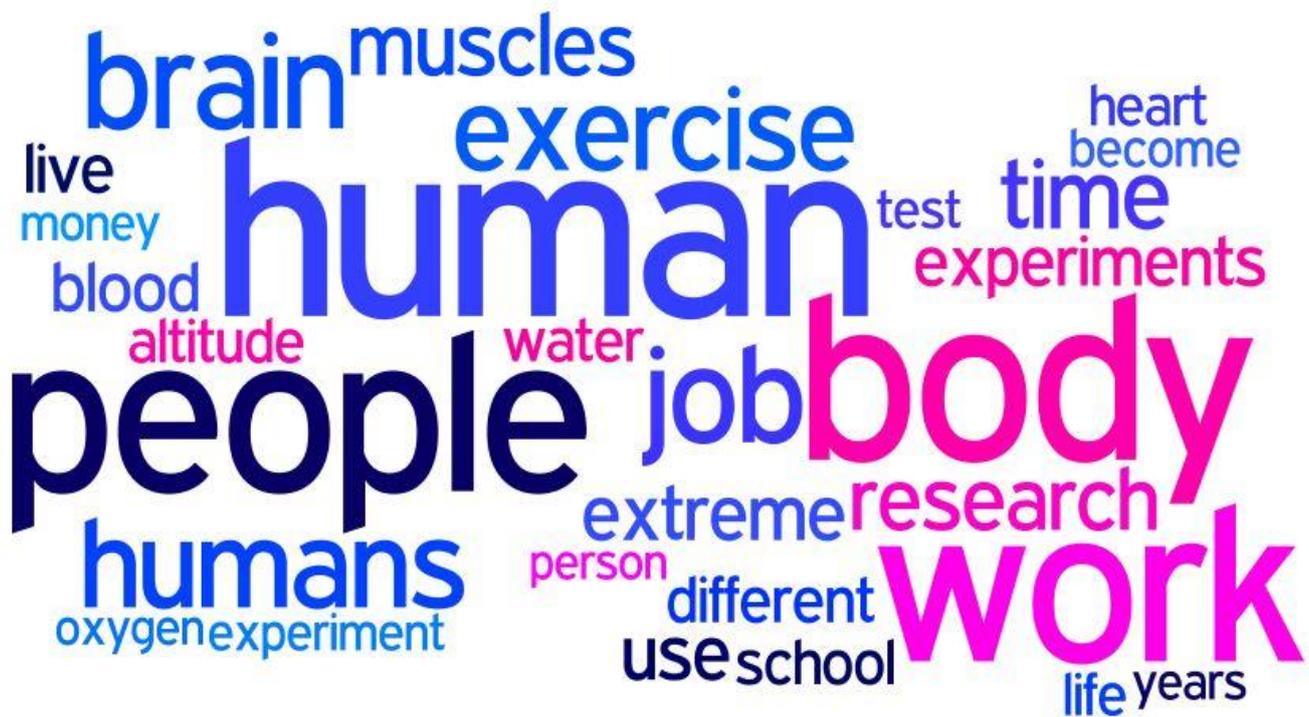
[If our muscles get smaller as we get older, why are adults usually stronger than children?](#)

[When we get to the ages of 50+ why are we not as active? What happens to us?](#)

Keywords of questions asked in the zone (the size of the word represents its popularity; the number indicates the number of times it was tagged as a keyword)

age<sup>3</sup> atmosphere<sup>2</sup> biology<sup>1</sup> blood<sup>2</sup> body<sup>3</sup> brain<sup>5</sup> cancer<sup>1</sup>  
Cardiovascular<sup>1</sup> cheese<sup>1</sup> chemistry<sup>1</sup> cloning<sup>1</sup> dinosaurs<sup>1</sup> DNA<sup>2</sup> element<sup>1</sup> endurance<sup>1</sup>  
exercise<sup>5</sup> gas<sup>1</sup> how science works<sup>2</sup> human<sup>3</sup> human  
body<sup>6</sup> injury<sup>1</sup> marine<sup>2</sup> muscles<sup>4</sup> neuroscience<sup>1</sup>  
Personal<sup>7</sup> physics<sup>1</sup> physiologist<sup>1</sup> race<sup>1</sup> research<sup>2</sup> respiration<sup>1</sup> school<sup>1</sup>  
science<sup>4</sup> sleep<sup>1</sup> temperature<sup>1</sup> space<sup>3</sup> speed<sup>2</sup> subject<sup>2</sup> team<sup>1</sup>  
temperature<sup>7</sup> ultrasound<sup>1</sup> water<sup>1</sup> win vote<sup>1</sup> Work<sup>11</sup> work routine<sup>3</sup>

Keywords from live chats in the zone (the size of the word represents its popularity)



### **Examples of good engagement**

There were some great discussions, specifically on ‘human limits’, in the chats:

**livok:** is the reason your in this field of science is to see how far humans endurance can go with the help of science so they evolve better to the ever changing climate?

**liambagley:** Good question! I think so yeah, I think that human endurance can be pushed further than it is now. Look at Usain Bolt for example, he runs 100m about 2 whole seconds faster than the winning times about 100 years ago. And this is through modern science that he is able to train in a certain way to make him better. I think we can only keep getting better. But there must be a limit somewhere!

**livok:** But is the reason he run so fast due to the so called “fast gene” that they say some have?

**liambagley:** I don’t think there is a “fast” gene so to speak, but there are genetics involved with how someone reacts to exercise. Everyone is unique. Also everyone is born with a set number of muscle fibres, you can’t grow more, you just build the ones you currently have!

And students sometimes commented on questions to thank the scientists for their answers, as can be seen from some of the sample questions above.

### **Scientist winner: Alan Richardson**

Alan's plans for the prize money: *"Help the undergraduate students to make videos for school children on how people adapt to environmental extremes."* [Read Alan's thank you message here.](#)



### **Student winner: nylepatel**

For asking lots of good questions, **nylepatel** will receive a £20 WH Smith voucher and a certificate.

### **Feedback**

We're still collecting feedback from teachers, students and scientists but here are a few of the comments made during the event...

*"Thank you very much for your time, this period has been very educational and has been a pleasure reading your interesting answers towards people's questions."* – theqprotocol, student

*"Awesome questions guys, really good, enjoyed it! My fingers hurt now from furious typing! I'm an old man!"* – Liam Bagley, scientist

*"that is amaze balls I did not know that"* – storm002, student

*"The questions some of you guys came up with was quite outstanding. Sometimes I found myself sitting at my computer during a chat thinking, why didn't I ever think to ask that?"* – Alan Richardson, scientist

*"Thank you all you scientists you have inspired me a lot!"* – spoderman1, student

*"We have learned so much thank you <3"* – mazzasayshowjumper, student