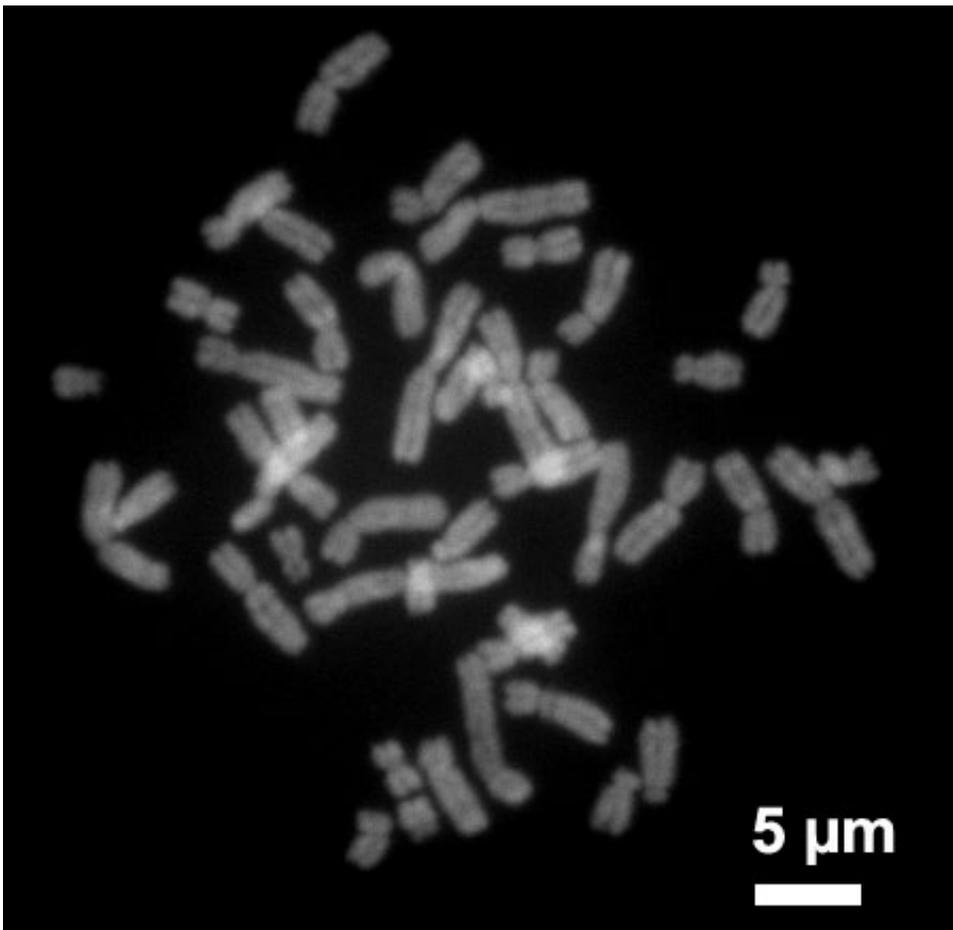


Tallness in Herzegovinian men linked to gene passed down from ancient big game hunters

April 12 2017, by Bob Yirka



Human chromosomes during metaphase. Credit: Steffen Dietzel/Wikipedia

(Phys.org)—A team of researchers with members from Montenegro, the Czech Republic and Croatia has found a possible genetic link between

early big-game hunters of the Upper Paleolithic Gravettian culture and modern Herzegovinian men. In their paper published in the journal *Royal Society Open Science*, the group describes how they surveyed a large number of Bosnian and Herzegovinian men and compared what they found with a gene believed to be at least partly responsible for causing people to grow taller than average.

It has been noted that men from Herzegovina are taller on average than men in other places—the average male height is just over six feet. But why the men there are so tall has been a mystery, especially considering the relative poverty of the area for very long periods of time. The region, in the Dinaric Alps, actually boasts the tallest average male height, though the Netherlands, a country that has enjoyed a high standard of living and thus a strong diet for a very long time, holds the record for tallest average for an entire nation. To understand why men in Herzegovina are so tall, the researchers started by looking at the I-M170 chromosome, which prior research has shown is highly prevalent in Herzegovinian people—approximately 70 percent have it.

The new research entailed surveying 3,207 Herzegovinian men between the ages of 17 and 20 regarding details on height and other body measurements—they found the average male height to be 181.2 cm. They then noted that prior research has shown that people of the Gravettian culture were exceptionally tall, as well, many of them averaging over six feet. They also noted that people in Herzegovina tend to ingest more calcium than people elsewhere due to minerals in the limestone bedrock in the area making their way into food sources.

Putting all the data together, the researchers concluded that the most likely cause of larger-than-average height of Herzegovinian men is lifestyle during the Paleolithic—men hunted large animals such as mammoth for survival—such a diet, heavy in protein, combined with small population densities, would have provided ideal conditions for

[height](#) selection, resulting in increasingly taller men who passed the trait down through their I-M170 chromosome to future generations.

More information: Pavel Grasgruber et al. The mountains of giants: an anthropometric survey of male youths in Bosnia and Herzegovina, *Royal Society Open Science* (2017). [DOI: 10.1098/rsos.161054](https://doi.org/10.1098/rsos.161054)

Abstract

The aim of this anthropometric survey, conducted between 2015 and 2016 in Bosnia and Herzegovina (BiH), was to map local geographical differences in male stature and some other anthropometric characteristics (sitting height, arm span). In addition, to investigate the main environmental factors influencing physical growth, the documented values of height would be compared with available nutritional and socioeconomic statistics. Anthropometric data were collected in 3192 boys aged approximately 18.3 years (17–20 years), from 97 schools in 37 towns. When corrected for population size in the examined regions, the average height of young males in BiH is 181.2 cm (181.4 cm in the Bosniak-Croat Federation, 180.9 cm in Republika Srpska). The regional variation is considerable—from 179.7 cm in the region of Dobož to 184.5 cm in the region of Trebinje. These results fill a long-term gap in the anthropological research of the Western Balkans and confirm older reports that the population of the Dinaric Alps is distinguished by extraordinary physical stature. Together with the Dutch, Montenegrins and Dalmatians, men from Herzegovina (183.4 cm) can be regarded as the tallest in the world. Because both nutritional standards and socioeconomic conditions are still deeply suboptimal, the most likely explanation of this exceptional height lies in specific genetic factors associated with the spread of Y haplogroup I-M170. The genetic potential for height in this region could then be the greatest in the world. Future studies should further elucidate the roots of this intriguing phenomenon, which touches an important aspect of human biodiversity.

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