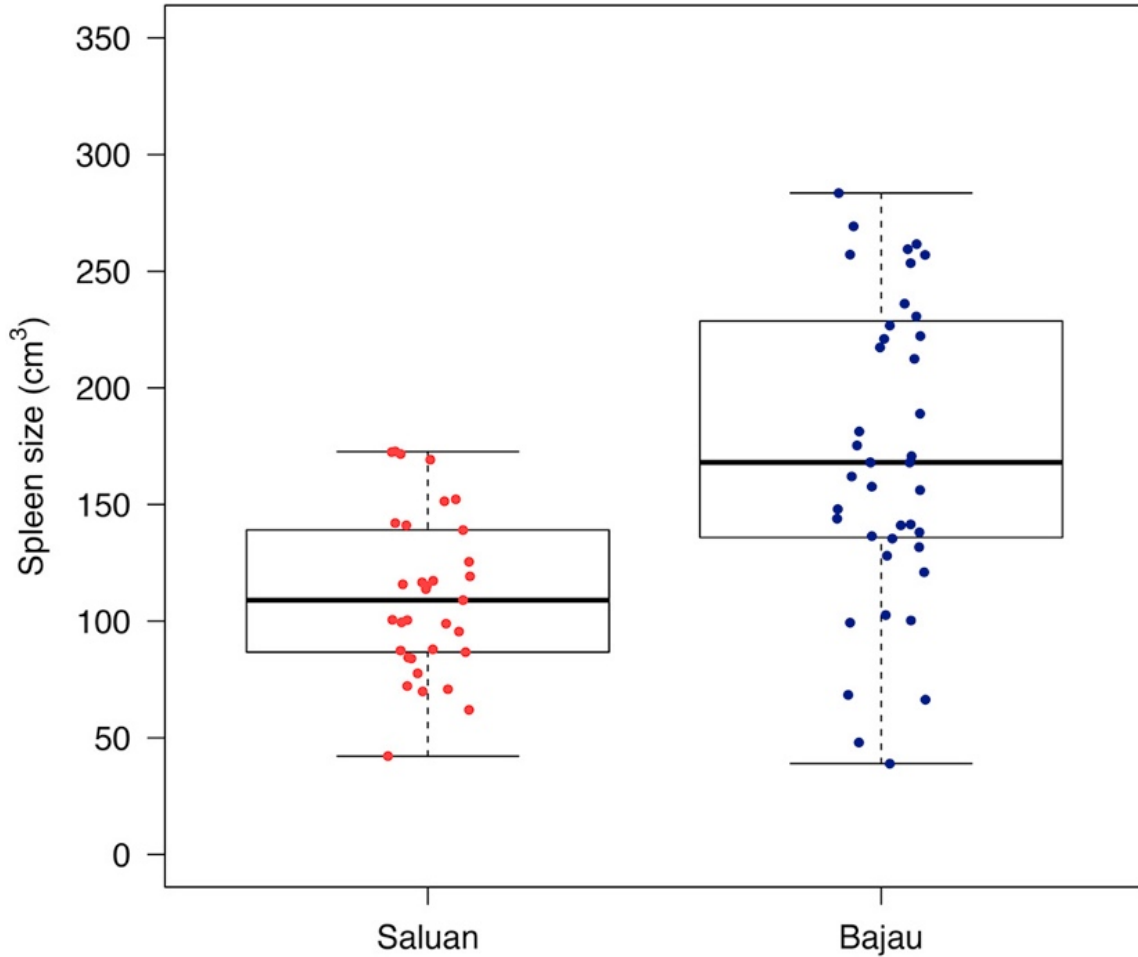




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Bajau vs. Saluan



Caption: Distributions of spleen sizes in two Southeast Asian populations: the Saluan and the Bajau (Sea Nomads). The red dots on the left represent 33 Saluan individuals, and the blue dots on the right represent 43 Bajau individuals. The thick black horizontal lines inside the boxes indicate the medians. The bottom and top sides of the boxes indicate the 25th and 75th percentiles, respectively.

OBSERVATIONS, NOTES & QUESTIONS

BACKGROUND INFORMATION	BIG IDEAS, NOTES & QUESTIONS
<p>Over the course of evolutionary time, humans have established populations in a variety of extreme environments, including mountains, deserts, and polar regions. The conditions in these environments may lead to natural selection for certain traits. One example of natural selection in humans may come from the Bajau people of Southeast Asia, who are sometimes called Sea Nomads. For over 1,000 years, the Bajau have lived off the seas, traditionally gathering food and other resources through freediving (diving that requires holding your breath underwater instead of using an oxygen tank). Bajau freedivers spend 60% of their working time underwater and may dive as deep as 230 feet.</p> <p>In this study, scientists investigated whether the Bajau’s freediving abilities are due partly to selection for certain genetic adaptations or are due solely to practice and training within the Bajau culture. The scientists compared the Bajau population to a nearby population, the Saluan, who do not traditionally do freediving. They measured the spleen sizes of individuals in both of these populations using an ultrasound machine.</p> <p>The scientists were interested in spleen sizes because of the spleen’s role during diving in mammals. All mammals have a spleen, which is an organ that normally stores a reserve of red blood cells. When many mammals (including humans) dive, their spleens contract and release the stored red blood cells into the circulatory system. These cells are rich in oxygen, which may help the mammals hold their breath and stay underwater longer. In a population of diving seals, for example, scientists found that the seals with the largest spleens could dive the longest. Before this study, however, it was not clear whether larger spleens could help humans dive longer too.</p>	