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| **Name:** |
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| **Group:** |
| 6A-5 |
| **Basic Science Question:** |
| What is gutta percha? |
| **Report:** |
|  Gutta percha is a material used in root canals to form a tight three-dimensional seal of the root canal system after removal of the dental pulp. Although there have been many other materials that have been used previously to accomplish this task, gutta percha as been the most successful at accomplishing this task to this date, making it the number one choice of endodontic filling material.[1] Gutta percha’s chemical composition is a trans-isomer of polyisoprene. This material is very similar to natural rubber (a cis-isomer variation). The dry coagulated sap of tree species from the Palaquium genus, which are native to Malaysia and Indonesia, is harveseted as a main component to make gutta percha. Gutta percha contains organic and inorganic components. The organic components consist of the gutta percha polymer (20%) and other waxes or resins (3%). This gives it tensile strength, stiffness, brittleness, and radiopacity. The inorganic components consist of Zinc oxide filler (56%) and barium sulfates (11%). Barium sulfate is a radiopacifier for the material. Zinc oxide increases brittleness and decreases percentage elongation and ultimate tensile strength.[1] It has also been shown to have antibacterial effects.[2] |
| **References:** |
| 1. Vishwanath, V. and Murali Rao, H. “Gutta-Percha in Endodontics – A Comprehensive Review of Material Science.” *Journal of Conservative Dentistry*, 22, *3*, 2019, 216 – 222.
2. Moorer, W. R. and Genet, J. M. “Antibacterial Activity of Gutta-percha Cones Attribute to the Zinc Oxid Component. Oral Surgery, Oral Medicine, Oral Pathology ,53, 5 1982, 508 – 517
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