Jaundice: The Battle Between Blue vs. Yellow

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Jaundice is a condition where there's too much bilirubin in the blood which makes the babies skin and eyes look yellow-orange. It happens to 50- 60% of newborn babies and to 80% of premature babies. Some of the symptoms include: eyes and skin looking yellow, dark urine, fever, and vomiting. Severe cases will require blood transfusion. Another common treatment includes phototherapy, which is when the baby is placed under lamps with only a diaper and eyes covered. The purpose of this experiment is to optimize a new way of applying the phototherapy treatment through the means of a blanket. The goal is to see which type of light, LED, fiber optics, or electroluminescent wire will give the highest radiance of blue light in a blanket made out of three different fabrics. The hypothesis is that the LED will produce the highest radiance of blue light, and distribute the light more evenly, with Fabric 2. This is because the LED is cheaper and Fabric 2 is reusable. First, the blankets were made. The three light sources were tested out separately with each of the three different fabrics. A spectrometer was used to measure the light. The light radiance was recorded for each light source and fabric. The results showed that the hypothesis was correct. The phototherapy blankets for each trial allow mothers to hold their child close to her, which will quicken the recovery time of the baby. They are also much cheaper than phototherapy at a hospital. Phototherapy represents a great alternative for people in third world countries who don't have immediate access to treatment.