Female: Diagnostic and Evaluation System for Anemia in Teenage Girls Due to Their Menstrual Cycle

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A recent CDC study showed that 3 in 5 teenage girls are depressed, a rise from last year. What's also on the rise? Iron Deficiency Anemia. Teenage girls are 2 times more likely to be depressed than teenage boys after starting puberty, as in, after they start their menstrual cycles. During menstruation, they can lose anywhere from 220 to 250 mg of iron per pint of blood per month. Iron deficiencies and anemia have been proven to be linked with depression, anxiety, psychiatric disorders, decreased IQ scores, fatigue, foggy brain, etc. and is one of the most undiagnosed or misdiagnosed deficiencies in the world, especially in adolescents. I wondered for those who couldn't get blood drawn, whether it be for financial or medical reasons, or lack of access, or even fear of needles, could I create some noninvasive way to measure anemia? I have created a completely noninvasive, sensor-based device to measure anemia and iron deficiency in adolescents. My solution works as expected, and includes a sensor-based hardware solution that transfers, further analyzes, and depicts the data on a smartphone app, and with the user's consent, uploads the data to the cloud server for data trend analysis. This device can be used at home, or at medical offices, and is especially geared towards those who have a high risk of massive health problems due to anemia, but cannot get blood tests or checkups frequently, whether due to cost or access. When we study depression, we study social media, schoolwork, and social life, but it often comes from biological factors as well, and this is a problem that can be solved or at least started to be solved much more easily than some of the other factors.

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