Emerging Vitiligo Treatments
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Research in vitiligo has made significant progress in the past 10 years, and an improved understanding of its pathogenesis is leading to encouraging new treatments. The most promising strategies at this time focus on targeted immunotherapy, although promoting melanocyte regeneration and normalizing melanocyte stress is also an active area of research. Many of these strategies have been informed by in vitro studies and animal models, but are also supported by proof-of-concept studies in a small number of vitiligo patients.

Treatment targets in vitiligo – keys to success

- Melanocyte stress – antioxidants, but little convincing data
- Autoimmunity – blocking cytokines and cytokine signaling
- Melanocyte regeneration, growth, and migration – α-MSH homologs, new surgical options

Targeted Immunotherapy – IFN-γ-chemokine and IL-15 signaling pathways

- Cytokine and cytokine receptor antibodies, small molecule inhibitors (IFN-γ, CXCL10, CXCR3)
- Cytokine signaling blockade – i.e. Janus Kinase (JAK) inhibitors
  o Early proof of concept studies:
    - Tofacitinib (pan-JAK inhibitor) oral
    - Ruxolitinib (JAK 1/2 inhibitor) oral, topical
  o Ongoing clinical trials: Incyte (topical), Aclaris (topical), Pfizer (oral)
- Newest potential cytokine target – IL-15 signaling to remove Trm cells for durable responses

Combining emerging therapies with existing therapies

References: