

Pathological angiogenesis

Pathological [angiogenesis](#) refers to the formation of new [blood vessels](#) in an abnormal and uncontrolled manner. In a healthy body, angiogenesis, the process of creating new blood vessels, is tightly regulated and serves important functions such as [wound healing](#), embryonic development, and [tissue repair](#). However, in pathological angiogenesis, this process becomes dysregulated and contributes to various diseases. Here are some examples of conditions where pathological angiogenesis is a significant factor:

Cancer: see [Tumor angiogenesis](#).

Age-Related Macular Degeneration (AMD): AMD is a leading cause of vision loss in older adults. In the "wet" form of AMD, abnormal blood vessel growth occurs beneath the retina, leading to blood vessel leakage, scarring, and vision impairment.

Diabetic Retinopathy: This is a complication of diabetes that affects the blood vessels in the retina. In diabetic retinopathy, weakened blood vessels can leak or close off, leading to poor blood flow and, in response, the development of abnormal new blood vessels.

Rheumatoid Arthritis: Pathological angiogenesis can occur in the synovium (joint lining) of individuals with rheumatoid arthritis, contributing to inflammation and joint damage. The formation of new blood vessels in the synovium can perpetuate the inflammatory process.

Psoriasis: This chronic skin condition is characterized by the development of abnormal blood vessels in the skin, leading to the characteristic red, scaly patches.

Endometriosis: In endometriosis, tissue similar to the lining of the uterus grows outside the uterus. This condition can involve the formation of abnormal blood vessels, leading to pain and other symptoms.

Inflammatory Bowel Disease (IBD): In conditions like Crohn's disease and ulcerative colitis, angiogenesis can be involved in the inflammation and tissue damage seen in the digestive tract.

The understanding of pathological angiogenesis has led to the development of targeted therapies to inhibit the growth of these abnormal blood vessels. Anti-angiogenic drugs, such as bevacizumab (Avastin), are used in the treatment of some cancers and eye conditions to limit blood vessel growth and reduce associated complications. Researchers continue to investigate the mechanisms of pathological angiogenesis to develop new treatments for a range of diseases.

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