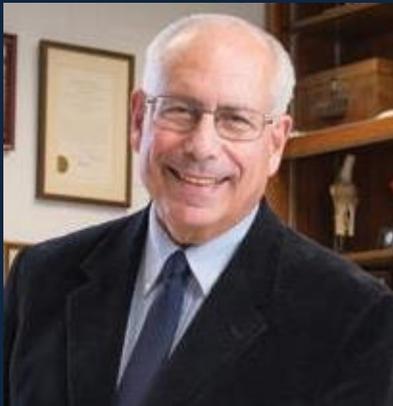




MSCs not stem cells

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- When:** 2pm on Thursday 10th of May 2018
- Where:** Stanley Quek Hall, Trinity Biomedical Sciences Institute

In the early 1990's, I invented the name "Mesenchymal Stem Cells" (MSCs) to describe cells obtained from human bone marrow, which could be isolated and cell culture expanded which would separately be induced into bone, cartilage, muscle, marrow stroma, tendon-ligament and fat in cell culture. It is now apparent that these MSCs do not provide replacement cells in vivo for naturally expiring, differentiated cells. Rather, the MSC is derived from perivascular cells, pericytes, which reside on every blood vessel of the body. Thus, in the 25,000 miles of capillaries of the human body there are many trillions of resident pericytes. These pericytes are released upon vessel damage and they differentiate into MSCs that act as sentinels to protect the injury site and to establish the microenvironment for the injured tissue to regenerate as opposed to repairing itself and forming scar or other dysfunctional tissue. The details of these properties will be reviewed as will the clinical use of MSCs.



Arnold I. Caplan, Professor of Biology and Director of the Skeletal Research Center at Case Western Reserve University. He received his Ph.D. from The Johns Hopkins University School of Medicine. Dr. Caplan is a national and international scholar focusing on experimentation in the area of musculoskeletal and skin development. He has published over 450 papers and manuscripts and has long been supported by the NIH and other non-profit and for-profit agencies for his efforts in trying to understand the development, maturation and aging of cartilage, bone, skin and other mesenchymal tissues and for his pioneering research on Mesenchymal Stem Cells.