



BILKENT UNIVERSITY

unam - INSTITUTE of MATERIALS SCIENCE & NANOTECHNOLOGY

FACULTY OF SCIENCE

**MATERIALS SCIENCE and NANOTECHNOLOGY
GRADUATE PROGRAM SEMINAR**

“Small vessels are big problem in stroke”

Prof. Dr. Turgay Dalkara, MD, PhD

Professor of Neurology and Neurosciences

Director, Institute of Neurological Sciences and Psychiatry

Hacettepe University

Stroke is the second most common cause of death. Annually, 15 million people worldwide suffer a stroke. Of these, 5 million die, and another 5 million are left permanently disabled, placing a burden on family and community.

Capillaries — the smallest of blood vessels — can remain clogged hours after a stroke, worsening brain damage. Studying mice, we have found that, after stroke, pericytes —small cells in the walls of capillaries that regulate tissue perfusion by contacting and relaxing — remain contracted hours even after blood flow in the major brain arteries has been restored, obstructing the transit of red blood cells. Insufficient red blood cell circulation causes failure of restitution of oxygen supply to the ischemic brain tissue that badly needs energy substrates. We have also found that this effect depends on the production of toxic oxygen and nitrogen free radicals by the blood vessel wall; if production of free radicals is blocked, pericyte contraction is relieved, improving perfusion and survival of the brain tissue. The findings point to a major but previously not recognized pathophysiological mechanism, which could help to identify a new target in the treatment of stroke.

Date : November 19, 2009 (Thursday)

Time : 16:40

Place : Faculty of Science Building, A Block, Seminar Room (SA 240)

Tea and cookies will be served before the seminar @16.00, UNAM building 2nd floor