

Vall d'Hebron Talks by VHIR 'Exercise and Anticancer Immunity'

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Speaker: Prof. Alejandro Lucía Mulas, member of the Department of Sports Science. Faculty of Medicine, Health and Sports. European University of Madrid.

Abstract: A growing body of epidemiological, clinical and experimental evidence indicates that regular physical activity reduces cancer risk, improves survival, and may decrease the likelihood of tumour recurrence. Beyond its well-established effects on metabolic and cardiovascular health, exercise is increasingly recognized as a potent modulator of immune function.

Both acute exercise bouts and long-term exercise training induce dynamic changes in immune cell mobilization, trafficking and function. These adaptations may enhance cancer immunosurveillance through multiple mechanisms, including the redistribution of cytotoxic lymphocytes, improved immune cell infiltration into tumours, modulation of inflammatory pathways, and favourable changes in the tumour microenvironment. Emerging evidence from animal models suggests that exercise can delay tumour growth, even in aggressive malignancies, whereas early human studies are beginning to uncover exercise-induced immune signatures associated with improved clinical outcomes.

This lecture will provide an overview of the current evidence linking exercise and anticancer immunity, spanning findings from basic science to clinical oncology. Particular emphasis will be placed on the role of natural killer cells, T lymphocytes, myeloid populations, and exercise-induced systemic factors as potential mediators of tumour control. The translational implications of this field will also be discussed, including the integration of exercise into cancer care and the potential of exercise-enhanced immune approaches as novel therapeutic strategies.

Host: **Dr. Tomàs Pinós**, senior researcher Neuromuscular and Mitochondrial Pathology (VHIR)

Online assistance: <https://gencat.zoom.us/j/81888808680>

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