

**WORLD MITOCHONDRIA SOCIETY**

# **How to Evaluate Mitochondria Function ?**

**Workshop on October 29, 2024**

**From Initiation to  
Improvement ...**



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# How to Evaluate Mitochondria Function?

From Initiation to Improvement...

October 29, 2024

In collaboration with the World Mitochondria Society (WMS), we are pleased to announce the organization of the workshop dedicated to **the Evaluation of Mitochondria Function, Dysfunction and Activities**, which will be held on October 29, 2024, one day before the [Targeting Mitochondria 2024 Congress](#).

## Context of the workshop

Mitochondrial function is involved in various pathologies: cardiological, neurological, nephrological, infections, and others. The central role of mitochondria in human metabolism is therefore strategic in the discovery of solutions to treat these pathologies.

Therefore, the evaluation of mitochondria is crucial to be able to detect and treat mitochondrial diseases.

## Objectives

- Present the technological tools to study and analyze mitochondria
- Present the mitochondrial markers to be evaluated in the context of medical studies
- Present the different methods for analyzing mitochondria and their functions: bioenergetics, biogenesis, dynamics and mitophagy
- Present the different biochemical diagnostic strategies for mitochondrial diseases
- Discuss some practical cases

This workshop is intended for anyone who wish to improve their skills and knowledge in the field of mitochondria, metabolism and bioenergetics, their key roles within the body, analysis tools and the latest therapeutic innovations.

Looking forward to meeting you very soon, please don't hesitate to contact us for any further information.

Best regards,



**Dr. Naig Gueguen, PhD**

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# How to evaluate Mitochondria Function?

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## Program

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13h00 Badges & Program Distribution for Workshop Attendees

14h00 **Session 1: Methods for analyzing mitochondrial function: Bioenergetics**

- *How to analyze the mitochondrial respiratory chain activity and oxidative metabolism?*
- *What are the technological tolls for in vitro studies?*
- *What are the technological tolls for in vivo studies?*
- *What are the technological tolls for ex vivo studies?*
- *Respiration rates: intact cells, permeabilized tissues and cells...*
- *Mitochondrial membrane potential*
- *ATP synthesis*
- *Redox states*

**Session 2: Methods for analyzing mitochondria: Biogenesis, dynamics and mitophagy**

*How to study mitochondrial network or analyze mitophagy?*

15h30 Break

16h00 **Session 3: Biochemical strategies for the diagnosis of mitochondrial disorders**

*What are the mitochondrial markers to be evaluated in the context of medical studies?*

17h00 **Presentation of Practical Cases & Interactive Discussion**

- *Mitochondrial function in models of longevity.*
- *Mitochondrial activity in the context of skin aging and skincare.*

17h30 Conclusion and end of the workshop

## Registration

Two registration options are available:

1. Register to the workshop alone
2. Combine the workshop's registration with the 15<sup>th</sup> World Congress of the World Mitochondria Society on Targeting Mitochondria.

[More information.](#)

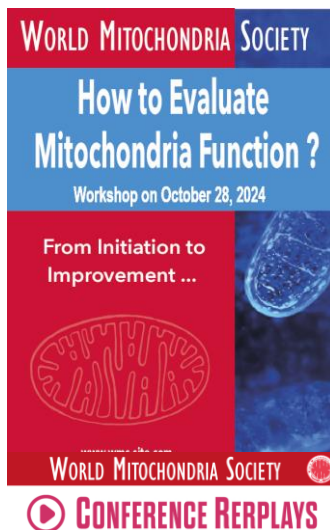
## Who Should Attend?

Are you a general practitioner, biologist, geneticist, researcher in oncology, neuroscience and pediatrics, or metabolic diseases? Research director, R&D director, engineer, research assistant, or business leader? You want to learn more about mitochondria, their key roles in the cellular metabolism, last analytical tools and methods.

## Teaching Resources

- Presentation support given to participants
- Presentation proposed by the speaker via Power Points
- Q&A session with all participants

## Workshop Report & Replay



All attendees will receive a report detailing each session and will obtain summaries and / or Power Point presentations of the various interventions.

If you cannot attend the workshop, you can order the report in PDF format.

### Annex and Protocols:

- *Analysis of respiratory chain complex activities, tissues and cells: detailed protocols, from buffers and reagents preparation to enzymatic measurement*
- *Analysis of complexes assembly by Blue Native-PAGE*
- *Oxygraphic analysis on permeabilized fibers or cells*

Access to workshop recordings will also be available to the attendees. Those who couldn't attend can also request access to recordings.

Contact us