

*Barcelona, Spain*

## Teaching Session 1 - Interactive

Paediatrics + Thyroid + Translational and Molecular Imaging Therapy Committee

Sunday, October 13, 14:30-16:00

### Session Title

**Management of Thyroid Cancer in Children**

### Chairpersons

Markus Luster (Marburg, Germany)

Lars Kurch (Leipzig, Germany)

### Programme

14:30 - 15:00 Arnaldo Piccardo (Genoa, Italy): Paediatric DTC Management

15:00 - 15:30 Fijs van Leeuwen (Leiden, Netherlands): Molecular Imaging in Paediatric DTC

15:30 - 16:00 Makus Luster (Marburg, Germany): Radioiodine Dosimetry and Therapy in Paediatric DTC Patients

### Educational Objectives

1. To underline the clinical features of differentiated thyroid cancer in childhood.
2. To analyze the different diagnostic procedures (specifically molecular imaging procedures) able to disclose structural relapse in children affected by differentiated thyroid cancer.
3. To clarify which patients may benefit from radioiodine therapy and how they should be treated.

### Summary

Compared with thyroid neoplasms in adults, those in the paediatric population exhibit differences in pathophysiology, clinical presentation, and long-term outcomes. Furthermore, therapy that may be recommended for an adult may not be appropriate for a child who is at low risk for death but at higher risk for long-term harm from overly aggressive treatment. Indeed, recent studies reveal an increase in all-cause mortality for survivors of childhood DTC, predominately due to second malignancies in children treated with radiation. These observations, coupled with a better understanding of the excellent prognosis associated with paediatric DTC, have now prompted the experts to specifically address treatment of children with malignant thyroid tumours.

In these context, accurate diagnostic procedures are highly warranted to correctly evaluate the persistence or recurrence of structural disease amenable for second surgery or RAI. Specifically, the ability to predict disease response to RAI is relevant to avoid any unnecessary radiation exposure. At the same time, in the case of unresectable persistent structural disease, RAI should be always considered with caution and the  $^{131}\text{I}$  activity, in presence of lung or other distant metastases, should be based on a proper dosimetric approach.

### Key Words

Differentiated Thyroid Cancer; Children; Imaging; Dosimetry; Radionuclide Therapy