Seaweed Derived Gaseous Iodine : A source of Iodine Intake in Coastal Communities ?

Smyth PPA[1,2], Burns R[1], Casey M, Andersson M, Mullan K, O'Dowd C[2 1]

UCD School of Medicine and Medical Science, University College Dublin, Ireland ,[2] School of Physics, National University of Ireland, Galway, Ireland[3] Royal Victoria Hospital, Belfast, N. Ireland, [4]ETH, Zurich, Switzerland

INTRODUCTION

- Conventional wisdom decrees that iodine intake in coastal regions exceeds that in inland areas.
- Ireland has traditionally been regarded as an area of borderline iodine deficiency which might not be expected on an island where few live more than 200Km from the sea.
- Seaweed provides the major source of iodine in the marine environment and is a major source of atmospheric iodine (I) [1,2]
- Atmospheric gaseous I_2 has been shown to be significantlly increased over seaweed beds.[3]

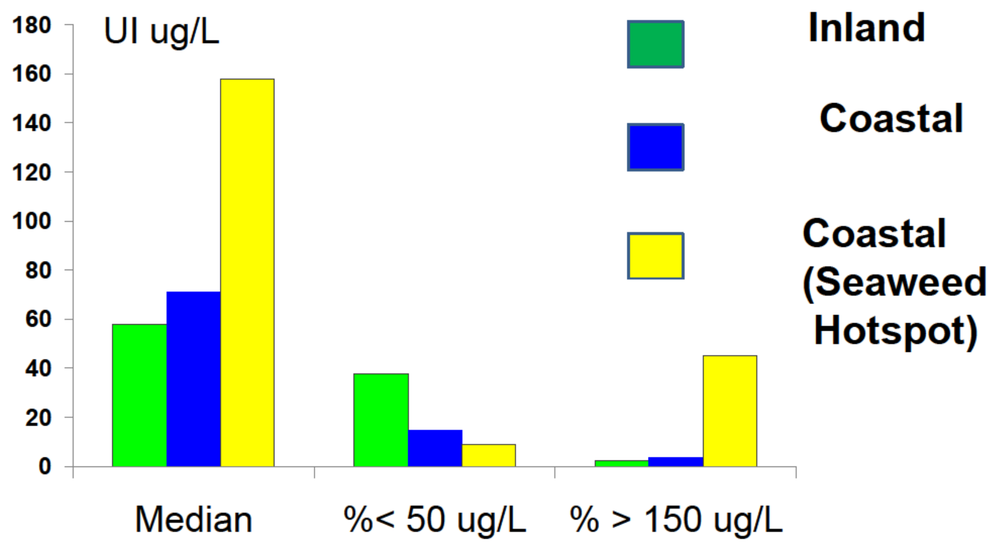
SUBJECTS AND METHODS

Urine samples were obtained from populations of female schoolchildren and adult females living in coastal areas, including those residing beside a seaweed hot spot, and inland areas of Ireland. UI was measured using a multiplate method based on Sandell-Kolthoff colorimetry[4].

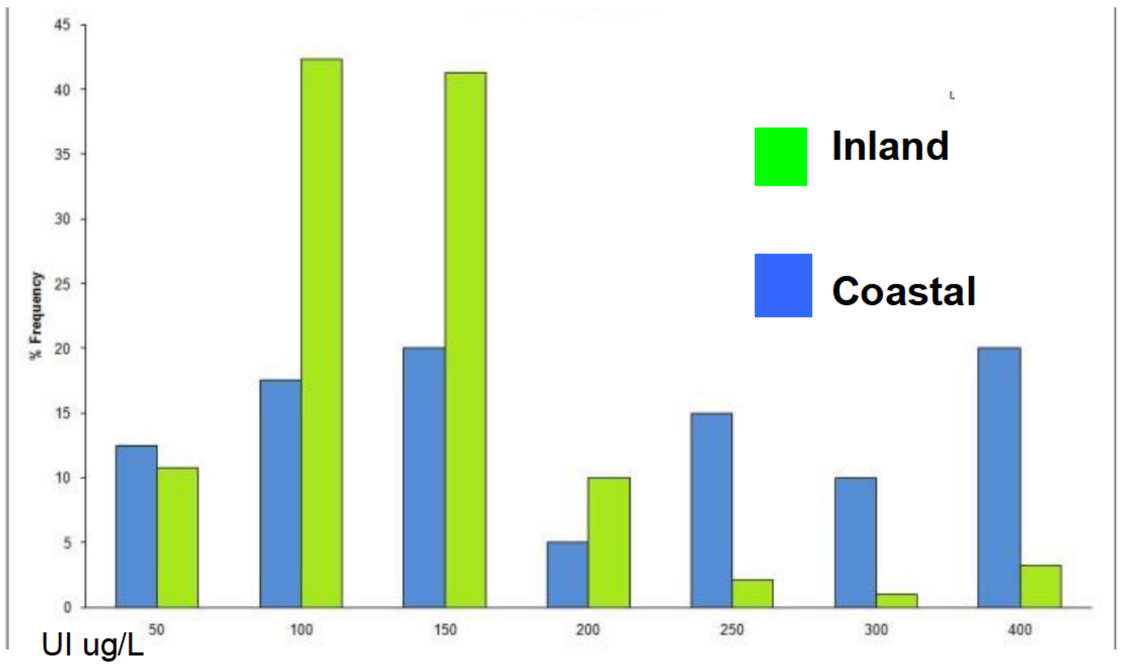
OBJECTIVE

To investigate urinary iodine excretion (UI) in schoolchildren and adult populations living in coastal areas with and without adjacent abundant seaweed growth.

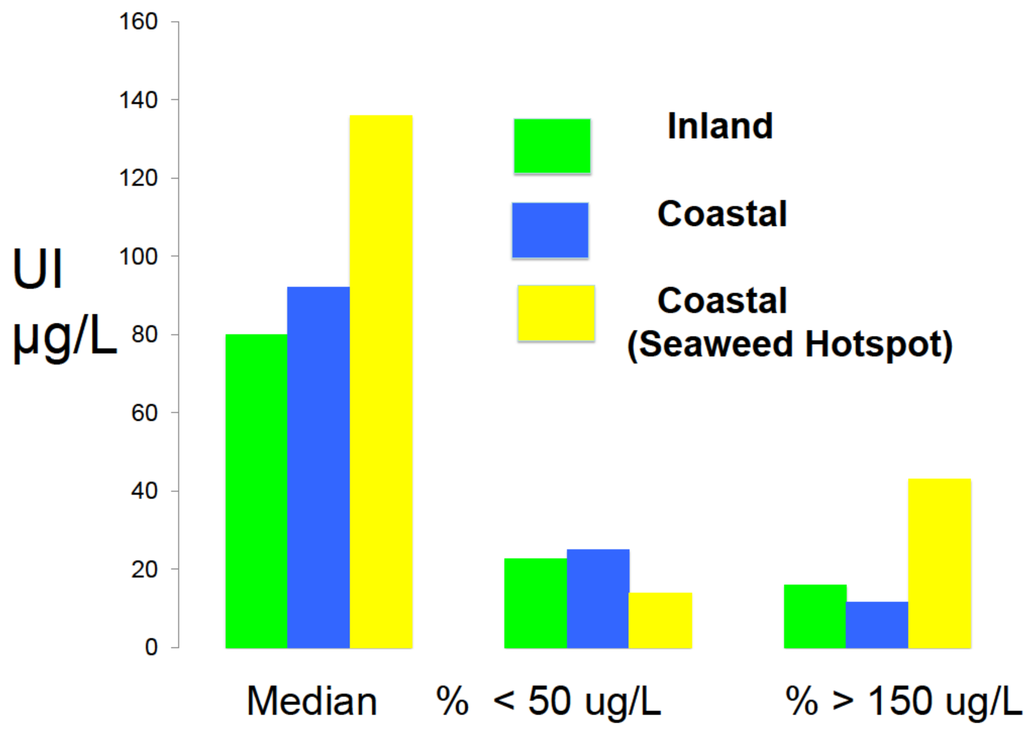
UI And Proximity To The Sea (Schoolchildren) Coastal v Inland



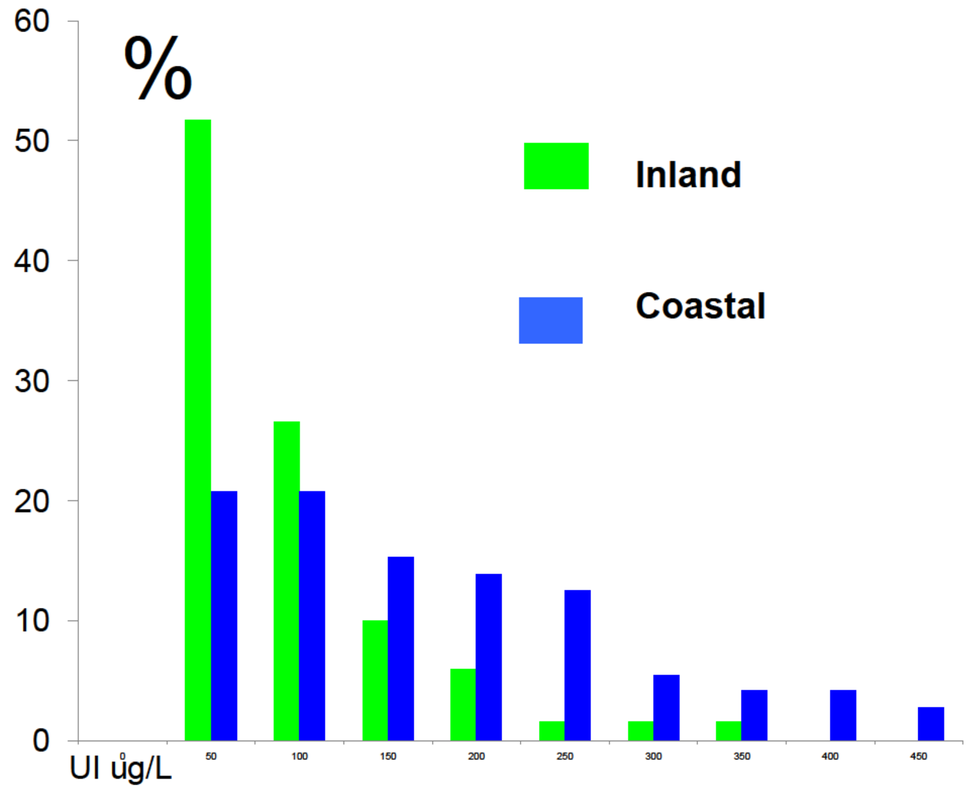
% Frequency Distribution of UI in Schoolchildren : Coastal v Inland



UI AND PROXIMITY TO THE SEA (ADULTS) Coastal v Inland



% Frequency Distribution of UI in Adult Females: Coastal v Inland



REFERENCES

1. O'Dowd et al 2002 *Nature* 417, 632–636
2. Smyth et al 2011 Environ Geochem Health 33:389-397
3. *Huang et al 2013* Atmos. Chem. Phys., 13, 5255-5264
4. *Ohashi et al 2000* Clinical Chemistry, 46, 529–536

CONCLUSIONS

These findings demonstrate that iodine status, as determined by UI, is not primarily a feature of inland or coastal dwelling[3] but may be influenced by relative seaweed abundance.

17 ECE 1051--EP

Thyroid non-cancer

Peter Smyth

DOI: 10.3252/pso.eu.17ece.2015

Poster presented at: ECE2015 16-20 May 2015 DUBLIN, IRELAND 17th EUROPEAN CONGRESS OF ENDOCRINOLOGY

PosterSessionOnline.com