The following presentation of the AVO’s LIGHT Proton Therapy Solution is part of our Development roadmap and is subject to conformity assessment(s) by AVO’s Notified Body as well as 510(k) clearance by the USA-FDA.
List of Illustrations

- Case Study – Treatment Plan for a Periocular Tumour Case
  - The LIGHT Accelerator in the Testing Facility in Geneva – Illustrations
  - Latest Developments at the Harley Street Center
Methods and materials

- We chose to mimic a case report in the literature that had been treated with an x-ray system
  - Pontoriero, A., G. Iati, A. Conti, F. Minutoli, A. Bottari, S. Pergolizzi and C. De Renzis (2014). "Treatment of periocular basal cell carcinoma using an advanced stereotactic device." Anticancer Res 34(2): 873-875 (Please see link to the original paper here)

- Commercial Treatment Planning System (TPS) from Raysearch used to calculate the example periocular tumour case

- The planned dose is 40 Gy (CGE) in 10 fractions to a tumour

- Additional planning goals were to minimize eye lens and eye dose

- Dose calculated using the RayStation Monte Carlo algorithm

- The maximum proton energy for each field was recorded

- Methodology used without a range shifting device (LIGHT changes its energy electronically)

- The source to surface planning technique was used, and the air gap was fixed at 7 cm for a 3 field Intensity Modulated Proton Therapy plan
Treatment Plan of a Periocular Tumour Based on LIGHT Data

Resulting plan: The eye and its lens are dramatically spared from radiation dose showing a steep dose gradient between them and the target.
Resulting plan: The eye and its lens are dramatically spared from radiation dose showing a steep dose gradient between them and the target
Further analysis is provided by the Dose Volume Histogram below. The lens dose is well controlled and the optic nerve dose is near zero.
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The LIGHT Accelerator in the Testing Facility in Geneva – Illustrations

From a bottle of hydrogen…
…to the proton source…
...to the proton source...
The LIGHT Accelerator in the Testing Facility in Geneva – Illustrations

...to the Low Energy Beam Transfer and RFQ...
...and the RFQ and SCDTLs...
The LIGHT Accelerator in the Testing Facility in Geneva – Illustrations

... and the remaining accelerating structures
The linear accelerator
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- Latest Developments at the Harley Street Center
Treatment room at the sub-basement level and support equipment on the mezzanine level
Room hosting the service trench, including water tank for the fire suppression system
Harley Street Project – Recent Illustrations

Treatment room and preparation/simulation room
Harley Street Project – Recent Illustrations

Technical area
Lift access and the lobby outside the accelerator hall
Harley Street Project – Recent Illustrations

Accelerator hall and the changing area above
Aerial view of the project