High Dose per Fraction, Hypofractionated Treatment Effects in the Clinic

HyTEC
Jimm Grimm, PhD
AAPM 2021

From Coal Miner to Data Miner in 3 Generations

Conflicts of Interest

Dr. Grimm designed and holds intellectual property rights to the
DVH Evaluator software tool
(www.DiversiLabs.com) which is a FDA-cleared product in commercial use, and which has been used for this analysis

Funding from Accuray, NovoCare

FDA 510k Number K092928  Rx Only  US Patents 9,019,307 & 9,192,782
www.DiversiLabs.com  service@DiversiLabs.com
Soli Deo Gloria
Why is HyTEC in the Red Journal?
The next 5 slides will explain this precedent that was already set by Rubin, Emami, and QUANTEC in Red Journal:

*International Journal of Radiation Oncology • Biology • Physics (IJROBP)*
known in the field as the
Red Journal

• The History and Future is explained in the Red Journal Podcast:

TD 5/5 and TD 50/5 Defined, by Dr. Phil Rubin, Founding Editor, Red Journal

> "Optimal time-dose-volume relationships can be determined by plotting failures and complications against increasing biological dose."

The landmark work relating NTCP to dose distributions in the 3DCRT era that preceded QUANTEC and HyTEC

HyTEC Overview   AAPM 2021  Jimm Grimm, PhD

QUANTEC: Quantitative Analysis of Normal Tissue Effects in the Clinic

HyTEC: ‘Hy’ Dose per Fraction, Hypofractionated Treatment Effects in the Clinic

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AAPM Working Group on SBRT (WGSBRT), Biological Effects Subcommittee (BESC)
Thank you and congratulations to all the HyTEC members and authors:

- John R. Adler, MD
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- Lei Dong, PhD
- Frank Lagerwaard, MD, PhD
- Arezoo Modiri, PhD
- Arjun Sahgal, MD
- Kristy Brock, PhD
- Sean Dresser, MS
- David Larson, MD
- Radhe Mohan, PhD
- Ziad Saleh, PhD
- Jimmy J. Caudell, MD
- Eric Ford, PhD
- Percy Lee, MD
- Vitali Moiseenko, PhD
- Stephen Sapareto, PhD
- Guang-Hong Chen, PhD
- Kenneth M. Forster, PhD
- Young Lee, PhD
- Jean Moran, PhD
- David Shepard, MD
- Peter Chen, MD
- Benedick Fraass, PhD
- Simon S. Lo, PhD
- Eduardo Moros, PhD
- Farzan Siddiqui, MD
- Quan Chen, PhD
- Steven Goetsch, PhD
- Lijun Ma, PhD
- Firas Mourtada, PhD
- Scott G. Soltys, MD
- Indrin Chetty, PhD
- John Hazle, PhD
- Anand Mahadevan, MD
- Andrzej Niemierko, PhD
- Daniel Spratt, MD
- Christopher P. Cifarelli, MD, PhD
- Dwight E. Heron, MD
- Mary K. Martel, PhD
- Nitin Ohri, MD
- Randy Ten Haken, PhD
- David A. Clump, MD
- Geoff Hugo, PhD
- Panayiotis Mavroidis, PhD
- Zoubir Ouhib, MS
- Bruce Thomadsen, PhD
- Joseph Deasy, PhD
- Saiful Huq, PhD
- Charles S. Mayo, PhD
- Jatinder Palta, PhD
- Wolfgang A. Tomé, PhD
- Andre Dekker, PhD
- Robert Jeraj, PhD
- William McBride, PhD
- Tarun Podder, PhD
- John Austin Vargo, MD
- Sonja Dieterich, PhD
- Grace Kim, MD, PhD
- Dimitris Mihailidis, PhD
- Damodar Pokhrel, PhD
- Yevgeniy Vinogradskiy, PhD
- Stephen Kry, PhD
- Michael T. Milano, MD, PhD
- Sharon Qi, PhD
- Ying Xiao, PhD
- Kathryn E. Dusenbery, MD
- Michael C. Joiner, PhD
- Ke Sheng, PhD

Special Appreciation to AAPM, ASTRO, and Red Journal Leadership, and to all the HyTEC Manuscript Editors and Reviewers:

- John R. Adler, MD
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Due to the anonymous nature of the review process, we are unable to acknowledge all the reviewers. If you reviewed an AAPM paper please let Jill@AAPM.org know.

These are all associated with the Red Journal – the precedent had already been set – now physicists have a growing role.

- Rubin
- Emami
- QUANTEC
- HyTEC
- PENTEC
Today’s HyTEC Session, AAPM 2021

HyTEC Overview: Jimm Grimm, PhD
HyTEC: The Project and the Product: Ellen Yorke, PhD
Example of the HyTEC Process: Pancreas TCP: Anand Mahadevan, MD
Physicist Modeler’s Perspective: Reporting Standards: Andrew Jackson, PhD
Physician’s Perspective: Clinical Needs and Opportunities: Lawrence B. Marks, MD

Conclusions

• Basic reporting of dose, volume, fractionation and outcome per patient is feasible and needed
  • You can do it, please publish the details to help future patients!
• Rubin / Emami / QUANTEC / HyTEC / PENTEC / etc. are continually needed as new modalities emerge
• When you write papers, please add details per patient to make your results useful for future data pooling initiatives

This is not the end – just the beginning!
If you treat patients you have data – let’s analyze and publish it together!