Communicating Benefit to Risk Ratio From Radiology Exams to the Patient and Provider

AAPM 2019 Annual Mtg., San Antonio, TX
Tuesday, July 16
7:30 am
TU-AB-304-0

Communicating Benefit to Risk Ratio From Radiology Exams to the Patient and Provider

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RITENOUR'S FIVE RULES FOR:

COMMUNICATING

BENEFIT TO RISK RATIO
TO PATIENTS AND PROVIDERS

Rule # 1

EMPLOY E.I. SKILLS

Emotional Intelligence

Daniel Goleman's five elements:

- **Self-awareness.**
- **Self-regulation.**
- **Motivation.**
- **Empathy.**
- **Social skills.**

Empathy

- ✓ Understand* the questioner's
  - ✓ Background knowledge
  - ✓ Fears
  - ✓ Biases
  - ✓ Desired outcome

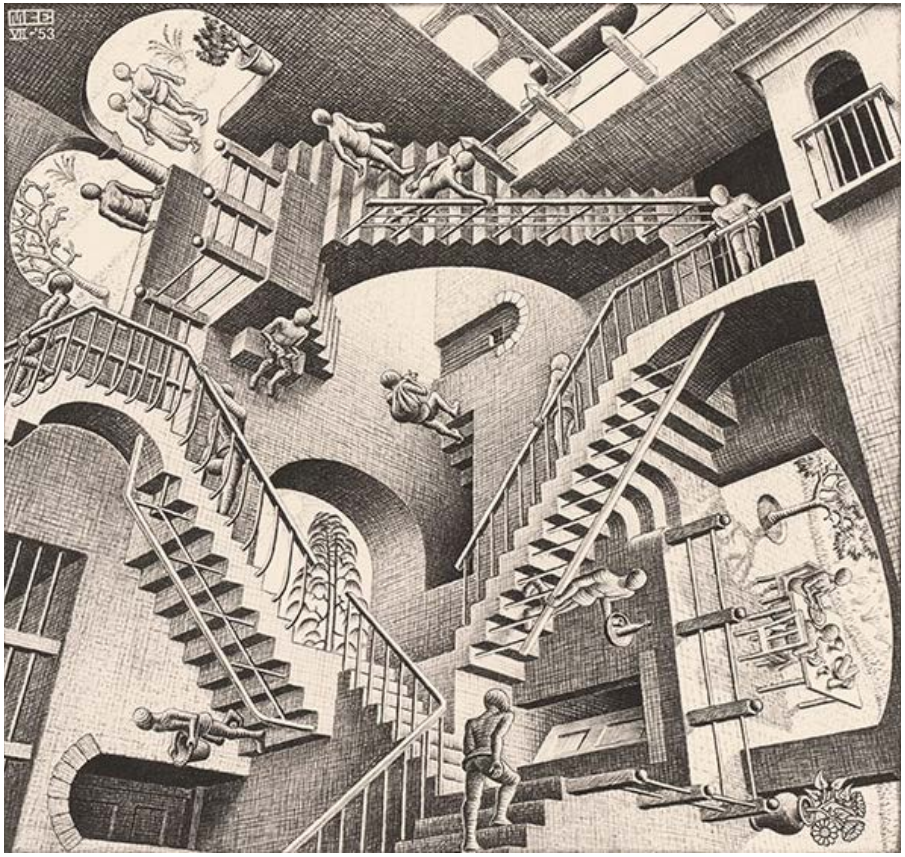
* You don't have to "feel" or "share" (sympathy) but you should **understand** (empathy).

Rule # 1

EMPLOY E.I. SKILLS

A Questioner is not a “Vacant Lot”

A Questioner arrives with a “Knowledge Structure”



You may find their “Knowledge Structure” to be bizarre and convoluted

A Questioner arrives with a “Knowledge Structure”

You may find their “Knowledge Structure” to be sensible* and in agreement with your own

*** Well, Duuuh … it’s sensible if it’s in agreement with your’s**

You have to add to the existing structure in a way that is compatible

Rule # 1

EMPLOY E.I. SKILLS

There are Two Analogies here

Patient or Provider has a:

1. **Puzzle they want to solve**
2. **Knowledge Structure already in place**

Empathy ***will help in both situations***

Rule # 1

EMPLOY E.I. SKILLS

Terminology

Communicating with the Patient:

Not: Subject, Case, Individual(s)

Use: Person, Patient, Other People

Communicating with the Provider:

Maybe Not: Subjects, Cases, Individuals

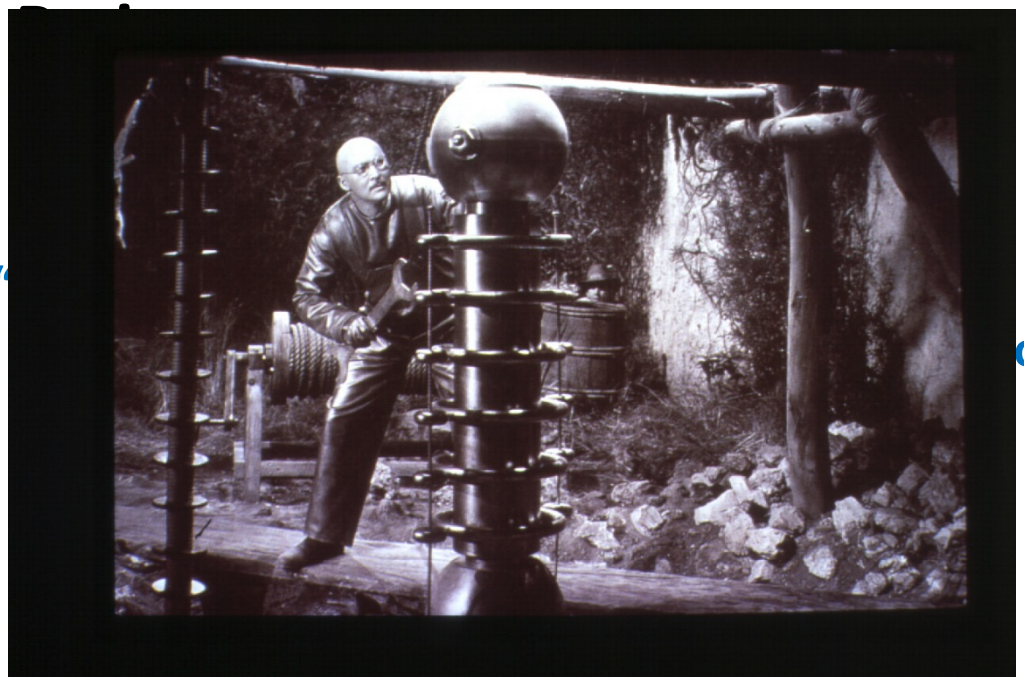
Should Use: Your patient, Patients, Others,
Refer to them by name

Rule # 2

DON'T MISREPRESENT YOURSELF

Don't offer too much detail on medical physics

✓ Don't give medical advice specific to that



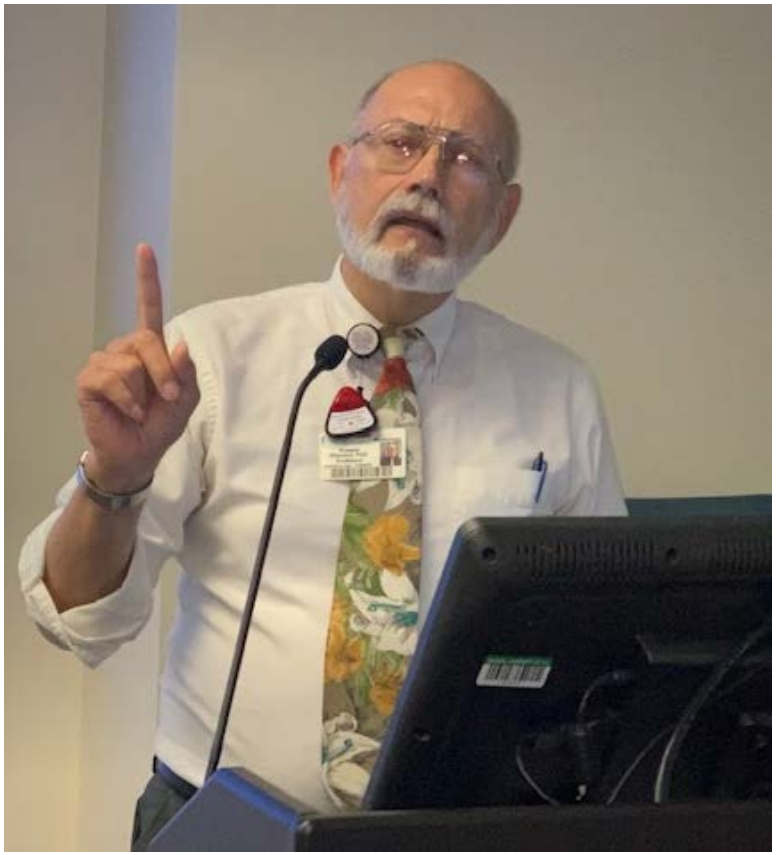
"

osure ?"

Rule #3

HAVE CONCISE INFORMATION AT HAND

"I know so much that I don't know where to begin"



Rule #3

HAVE CONCISE INFORMATION AT HAND

- ✓ **Keep up to date**
  - ✓ **Popular Press, CNN, Web**
  - ✓ **SAMS, Reading, Listening**
- ✓ **Help them with Quantities and Units ?**
- ✓ **Separate Dx into:**
  - ✓ **Low: Dental, chest, extremities**
  - ✓ **Medium: Fluoro, CT**
  - ✓ **High: Interventional**
- ✓ **Compare to other risks in life**
- ✓ **Compare to other risks in medicine**
- ✓ **Compare to background dose**
  - ✓ **Be clear: background "noise"**

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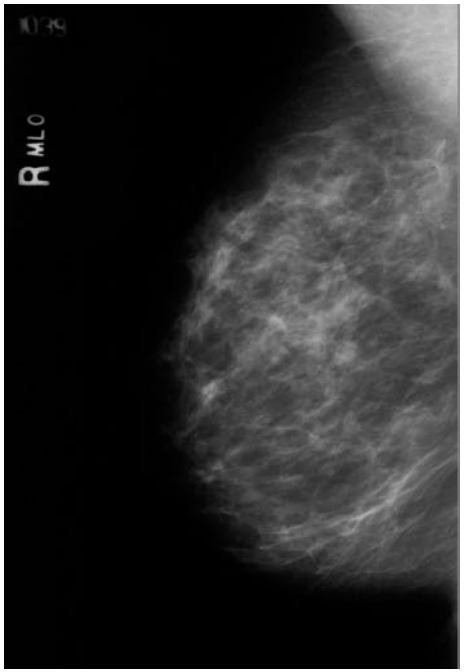
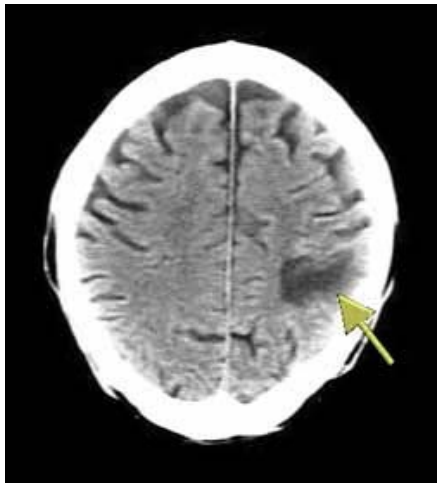
Dental: E << 0.1 mSv

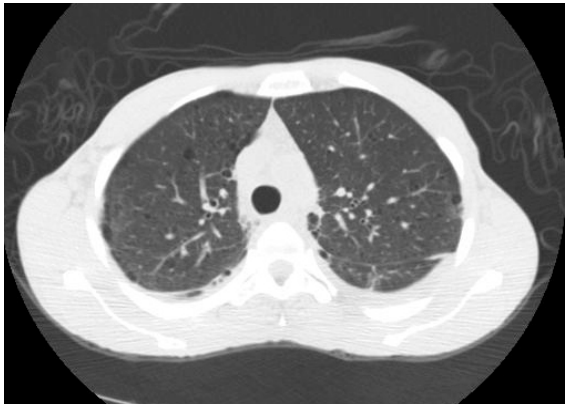
Mammography: E <0.1 mSv



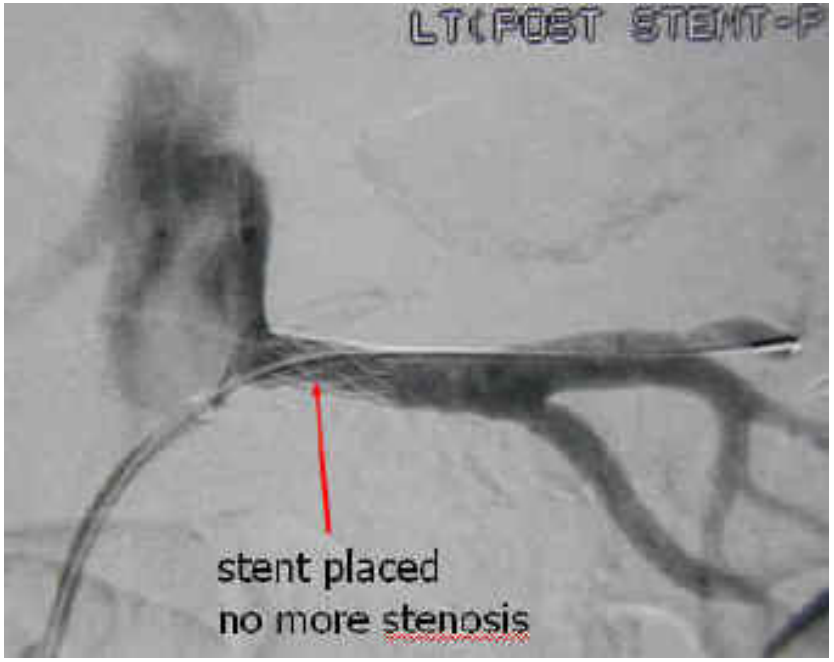
Abd / Pel X-ray : E ~ 0.7 mSv

CT: E ~ 7 -15 mSv





Interventional Radiology: E ~ 9 mSv



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Risks That Increase Chances of Death by 1 in a million

Risk	Cause of Death
1 chest film	Cancer
40 tablespoons of peanutbutter	Liver Cancer (Aflatoxin B)
100 charcoil broiled steaks	Cancer (Benzopyrene)

Source: Wilson, Pochin

Risks That Increase Chances of Death by 1 in a million

Risk	Cause of Death
Smoking 1.4 cigarettes	Ca, heart disease
Spending 1 hr in a coal mine	Black lung disease
Travelling 60 miles by car	Accident
Travelling 400 miles by jet	Accident

Source: Wilson, Pochin

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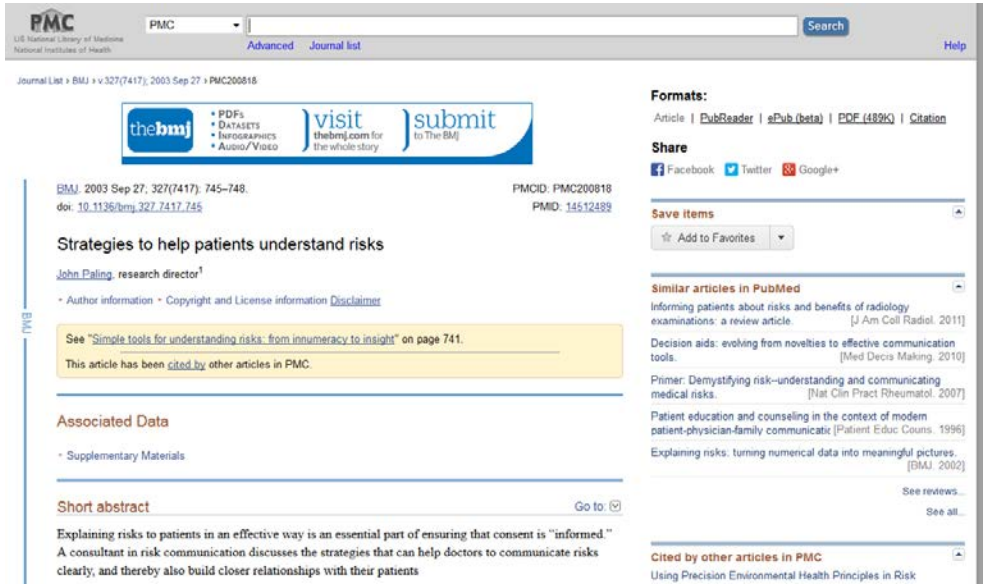
FDA

https://www.fda.gov/drugs/drug-information-consumers/think-it-through-managing-benefits-and-risks-medicines

Medical Risk Information



Nat. Lib. Med.

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC200818/

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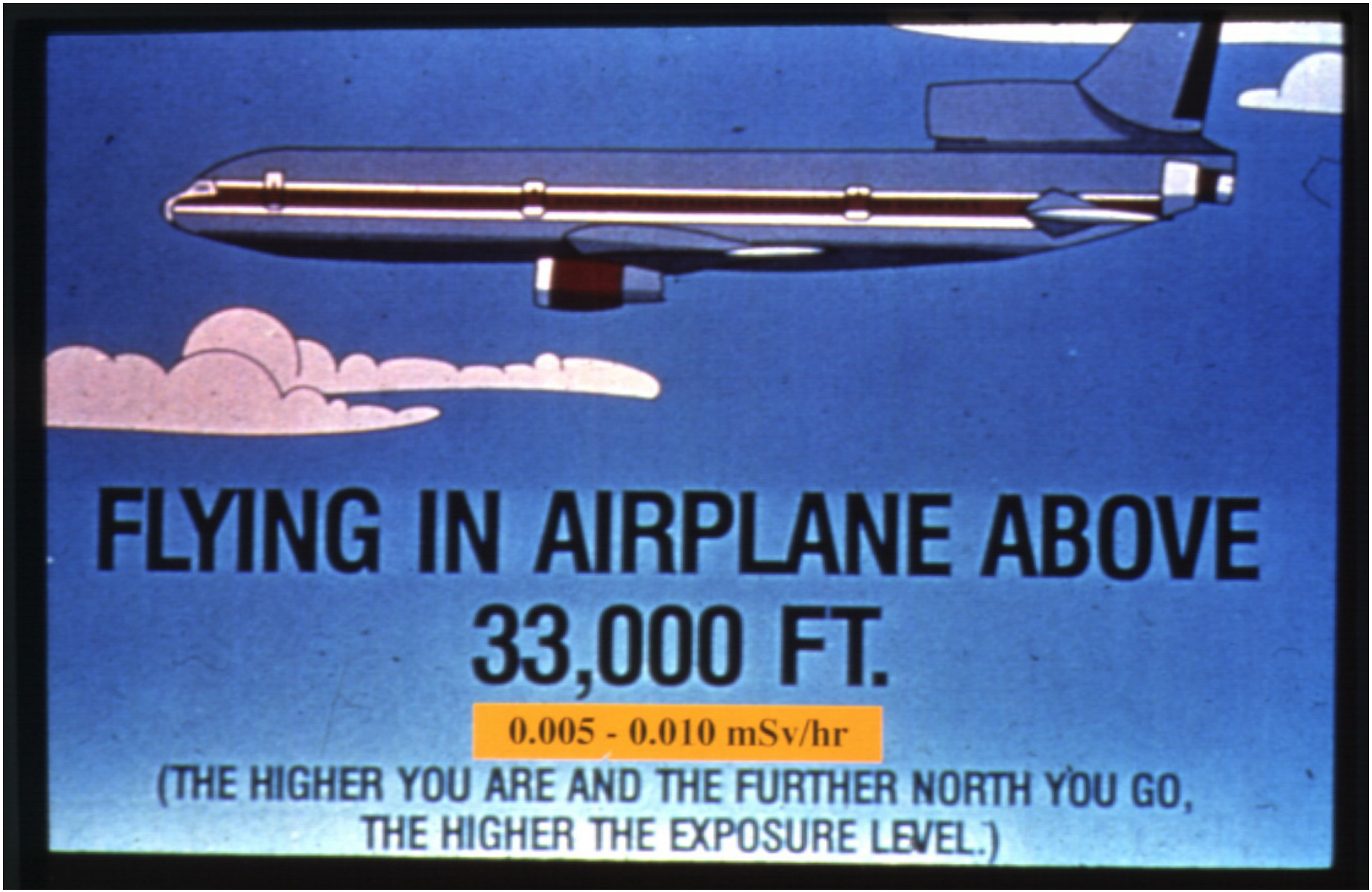
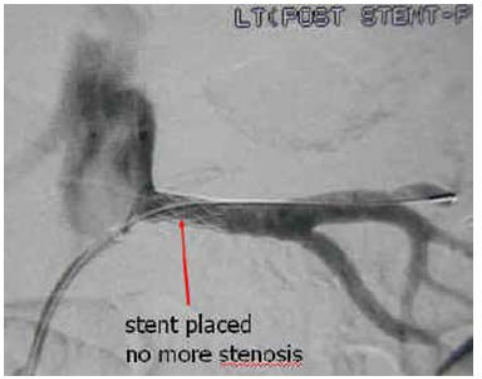

FLYING IN AIRPLANE ABOVE
33,000 FT.
0.005 - 0.010 mSv/hr
(THE HIGHER YOU ARE AND THE FURTHER NORTH YOU GO,
THE HIGHER THE EXPOSURE LEVEL.)

Rule #4

DON'T JUST MINIMIZE RISK

- ✓Compare risk and benefit
- ✓Screening vs. Diagnosis vs. Intervention



Overall Risk of Fatal Ca = $\frac{160{,}000}{\text{million}}$ = 16 % ± ? %

Estimated Radiogenic Risk of Chest x-ray = $\frac{8}{\text{million}}$ = 0.0008 %

Rule #5

THE GOAL IS NOT TO GET THEM TO AGREE WITH YOU

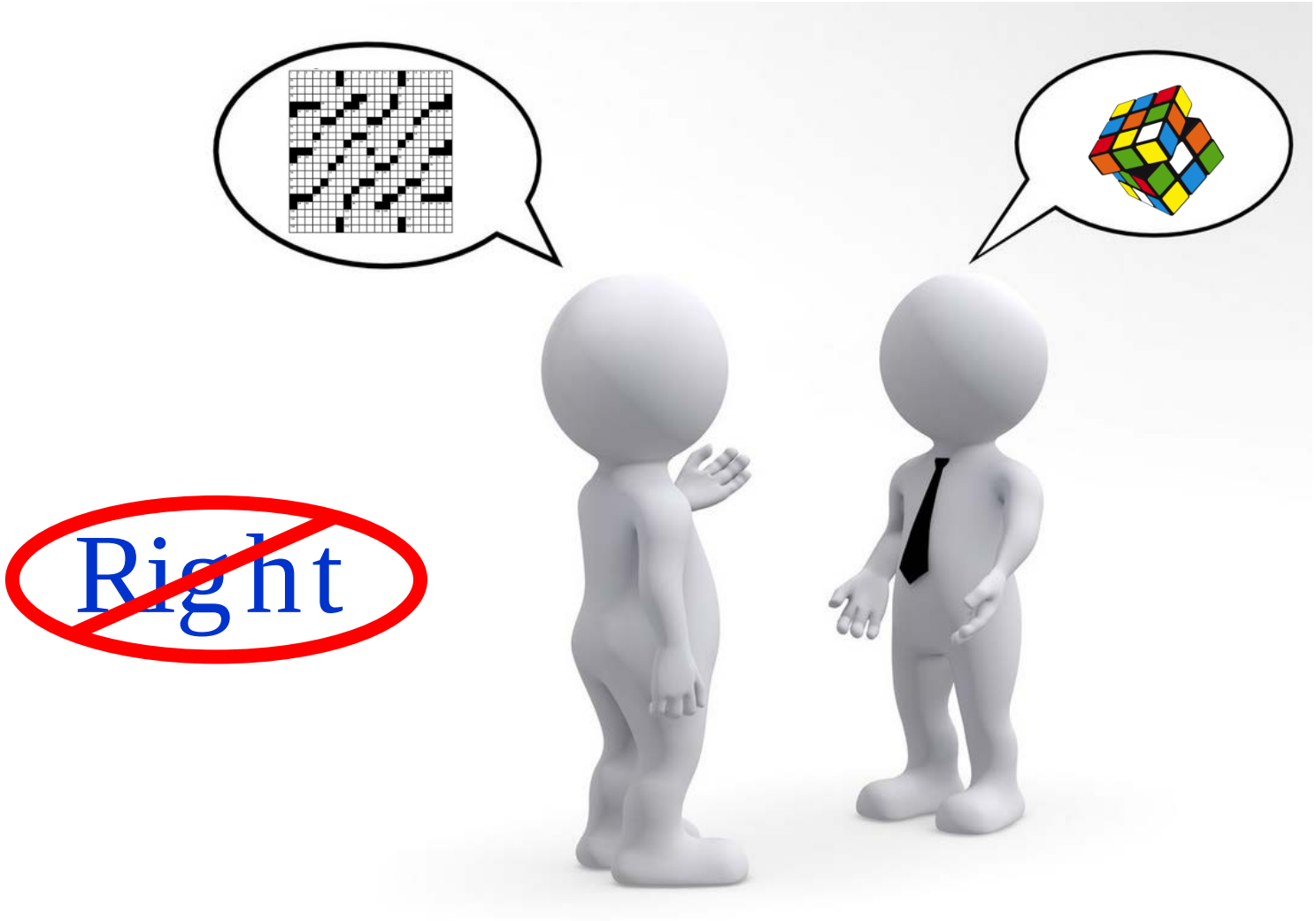
RIGHT ?

The goal is to transfer

the **RIGHT** AMOUNT

of the **RIGHT** INFORMATION

at just the **RIGHT** TIME


Right

Rule # 1 - EMPLOY E.I. SKILLS

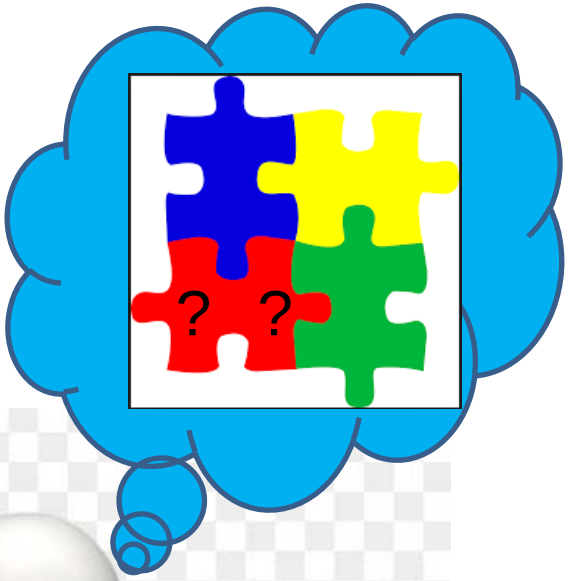
Rule # 2 - DON'T MISREPRESENT YOURSELF

Rule #3 - HAVE CONCISE INFORMATION AT HAND

Rule #4 - DON'T JUST MINIMIZE RISK

Rule #5 - THE GOAL IS NOT TO GET THEM TO AGREE WITH YOU

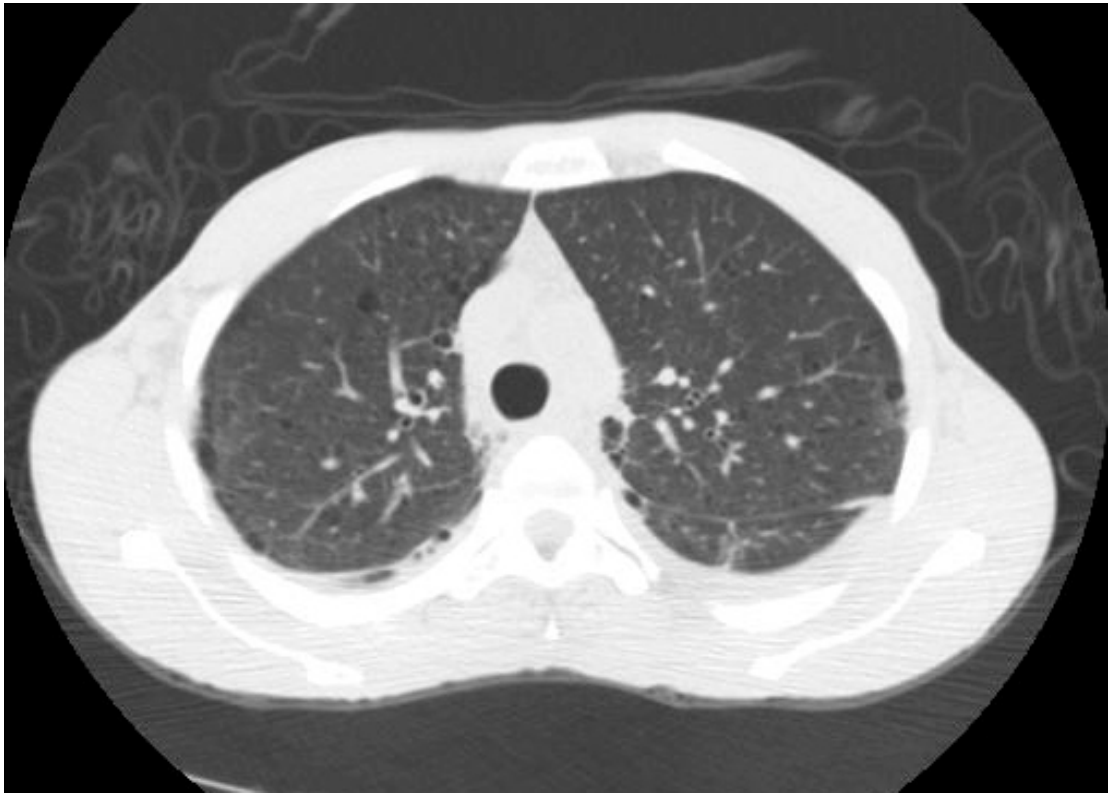
The (Happy) End



RIGHT !!!

Chest CT ~ 350 chest x-rays

Chest CT ~ 7 mSv



1 chest CT = how many chest x-ray examinations?

Typical annual doses (mSv) of exposed workers in diagnostic radiology

CT technologists	0.05 - 0.3
General radiographers	0.05 - 0.5
Fluoroscopy technologists	2.0 – 4.0
Radiologists	1.5 – 2.5
Nurses	1.80 - 2.24
RT interns	0.40 - 0.7

Legal limit for radiation workers in the US - 50 mSv / year