


受試者輻射量計算公式網址，參考美國 the American Society of Radiologic Technologists (ASRT)：  
<https://www.xrayrisk.com/>



**X-RAY RISK**  
Promoting responsible imaging through patient and provider education

FAQ of the Month  
Top 5 Ways to Decrease your Exposure to Medical Radiation  
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This site provides information for patients and health care providers to facilitate well-informed discussions about the increased risk of cancer from radiation exposure as a result of medical imaging.

**CALCULATE YOUR RISK**  
Print an Individual Report

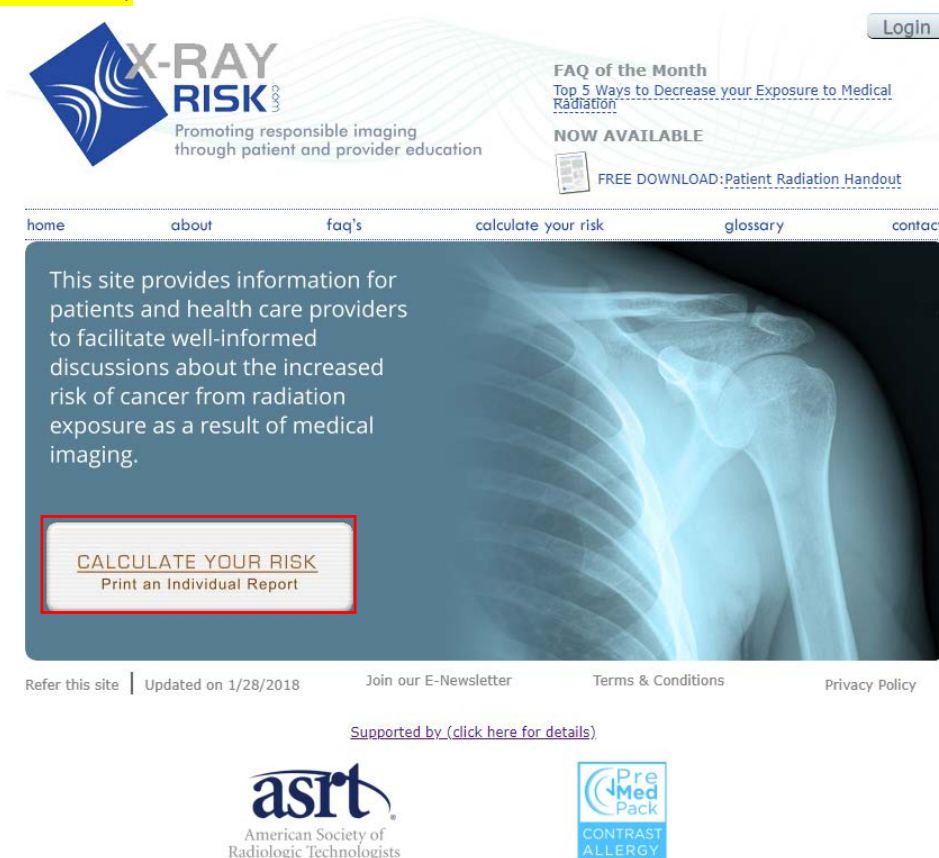
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#請點選(Calculate Your Risk)



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#請點選(DEXA Scan(Bone Density))

以此為例說明



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## Calculate your risk

**Plain Films (x-rays)**

- Cervical x-rays
- Hip x-rays (unilateral)
- Neck x-rays
- Upper Back x-rays
- Lower Back x-rays
- Extremity x-rays (Hands, Feet, etc)
- Mammogram (unilateral)
- Dental x-ray (panoramic)
- Dental x-ray (4 intraoral bitewings)
- Skull x-rays
- DEXA Scan (Bone Density)**

Dose is based on multiple views

**CT Scans**


**Fluoroscopy**

**Nuclear Medicine**

**Interventional Procedures**

**MRI and Ultrasound**

Choose a study from the panels




Click on the panel titles to slide open additional studies.

Please see Glossary for description of different studies.

n/calculator/select\_study.php?id=36

#請點選(Standard Exam)



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## Calculate your risk

**Plain Films (x-rays)**

- Chest x-ray (2 views)
- Abdomen x-rays
- Pelvis x-rays
- Hip x-rays (unilateral)
- Neck x-rays
- Upper Back x-rays
- Lower Back x-rays
- Extremity x-rays (Hands, Feet, etc)
- Mammogram (unilateral)
- Dental x-ray (panoramic)
- Dental x-ray (4 intraoral bitewings)
- Skull x-rays
- DEXA Scan (Bone Density)

**CT Scans**

**Fluoroscopy**

**Nuclear Medicine**

**Interventional Procedures**

**MRI and Ultrasound**

Selected study:

### DEXA Scan (Bone Density)

Choose which type of a calculation

**Standard Exam**

If you want to estimate risk from a recurring exam (yearly mammogram, dental x-rays, etc) [click here](#)

Please see Glossary for description of different studies.

n/calculator/calculator-normal-studies.php?id=36

#就可以看到下列網頁



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 **Risk Calculator** [Help](#)

<b>Study:</b>	<b>DEXA Scan (Bone Density)</b>
<b>Gender:</b>	Male <input checked="" type="radio"/> Female <input type="radio"/>
<b>Age at Time of Study:</b>	<input type="text"/> (years)
<b>Number of Exams:</b>	<input type="text"/>
<b>Effective Dose:</b>	<input type="text"/> (mSv)
<b>DLP (Optional for CT):</b>	<input type="text"/> (mGy · cm)
<input type="button" value="Calculate"/>	

<b>Total Effective Dose:</b>	<input type="text"/> (mSv)
<b>Additional Cancer Risk:</b>	<input type="text"/> (%)
<b>Baseline Cancer Risk:</b>	<input type="text"/> (%)
<b>Baseline + Additional Risk:</b>	<input type="text"/> (%)

To learn more about how these calculations are made, see the [About](#) page.

**Plain Films (x-rays)**

#請填入受檢者的性別、年齡\_例如\_Mmale、52 歲

請點選(Calculate)



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 **Risk Calculator** [Help](#)

<b>Study:</b>	<b>DEXA Scan (Bone Density)</b>
<b>Gender:</b>	Male <input checked="" type="radio"/> Female <input type="radio"/>
<b>Age at Time of Study:</b>	<input type="text"/> (years)
<b>Number of Exams:</b>	<input type="text"/>
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<b>DLP (Optional for CT):</b>	<input type="text"/> (mGy · cm)
<input type="button" value="Calculate"/>	

<b>Total Effective Dose:</b>	<input type="text"/> (mSv)
<b>Additional Cancer Risk:</b>	<input type="text"/> (%)
<b>Baseline Cancer Risk:</b>	<input type="text"/> (%)
<b>Baseline + Additional Risk:</b>	<input type="text"/> (%)

#請點選(Preview Report)

Please see [Glossary](#) for description of different studies.

Your X-ray Risk Report

Study	Gender	Age	# of exams	Dose (mSv)	Additional Cancer Risk(%)
DEXA Scan (Bone Density)	Male	52	1	0.001	0.000005%
Totals:			1	0.001	5.0E-6%

An Additional Cancer Risk of 0.000005% is equal to 1 in 20000000 chances.

Or said another way, a 99.999995% chance of having no effect of the above studies.

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Save Report

Preview Report

Comparison Doses			
Natural Background	3.1 mSv/year <sup>10</sup>	Domestic Pilots	2.2 mSv/year <sup>11</sup>
Average US Exposure	6.2 mSv/year <sup>10</sup>	7 Hour Airline Flight	0.02 mSv <sup>12</sup>
Chest x-ray (2 views)	0.10 mSv	Chest CT	7.0 mSv

Estimated Lifetime Risk of Death from Various Sources<sup>13</sup>

#請點選(Printer-Friendly Report)

RADIATION RISK CALCULATOR [Login](#)

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It is important for you to talk to your doctor about the tests you have had done or are considering having. This site is intended to provide information about your additional risk of cancer based on medical imaging, not to provide medical advice. We want patients to have accurate information when weighing the pros and cons of medical imaging. It is important to remember that in properly performed individual exams, the potential health benefits almost always outweigh the potential risks. Averages do not predict what is going to happen to you, but we provide this information to ensure patients and physicians are informed when making medical decisions.

Study	Gender	Age	# of exams	Dose (mSv)	Additional Cancer Risk(%)
DEXA Scan (Bone Density)	Male	52	1	0.001	0.000005%
Totals:			1	0.001	5.0E-6%

An Additional Cancer Risk of 0.000005% is equal to 1 in 20000000 chances.

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Comparison Doses			
Natural Background	3.1 mSv/year <sup>10</sup>	Domestic Pilots	2.2 mSv/year <sup>11</sup>
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Chest x-ray (2 views)	0.10 mSv	Chest CT	7.0 mSv

Estimated Lifetime Risk of Death from Various Sources<sup>13</sup>

Motor Vehicle Accident	1% or 1 in 100 chances
Drowning	0.1% or 1 in 1000 chances
Bicycle Accident	0.01% or 1 in 10,000 chances
Lightning	0.001% or 1 in 100,000 chances

Keep in mind, the overall lifetime risk of developing an invasive cancer is 37.5% (1 in 3) for women and 44.9% (1 in 2) for men regardless of imaging history. These statistics are averages and do not predict what is going to happen to you. They do not take into consideration individual risk factors including lifestyle (smoking, diet, exercise, etc), family history (genetics) or radiation exposure. The majority of cancers occur later in life and the average lifetime risk of dying from cancer is 25% (1 in 4).

Return to Calculator

Printer-Friendly Report





It is important for you to talk to your doctor about the tests you have had done or are considering having. This site is intended to provide information about your additional risk of cancer based on medical imaging, not to provide medical advice. We want patients to have accurate information when weighing the pros and cons of medical imaging. It is important to remember that in properly performed individual exams, the potential health benefits almost always outweigh the potential risks. Averages do not predict what is going to happen to you, but we provide this information to ensure patients and physicians are informed when making medical decisions.

Study	Gender	Age	# of exams	Dose (mSv)	Additional Cancer Risk(%)
DEXA Scan (Bone Density)	Male	52	1	0.001	0.000005%
					<b>5.0E-6%</b>

**Based on your radiation exposure from these studies, your additional risk of getting cancer is 0.000005%**

An Additional Cancer Risk of 0.000005% is equal to **1 in 20000000** chances.

Or said another way, a 99.999995% chance of having no effect of the above studies.

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Keep in mind, the overall lifetime risk of developing an invasive cancer is 37.5% (1 in 3) for women and 44.9% (1 in 2) for men regardless of imaging history. These statistics are averages and do not predict what is going to happen to you. They do not take into consideration individual risk factors including lifestyle (smoking, diet, exercise, etc), family history (genetics) or radiation exposure. The majority of cancers occur later in life and the average lifetime risk of dying from cancer is 25% (1 in 4).