

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/>

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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.

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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

The screenshot shows the X-RAY RISK website. The logo is a blue square with white curved lines. The text 'X-RAY RISK' is in large blue letters, with '100%' below it. Below the logo is the tagline 'Promoting responsible imaging through patient and provider education'. On the right, there is a 'Login' button and a section for 'FAQ of the Month' titled 'Top 5 Ways to Decrease your Exposure to Medical Radiation'. Below that, it says 'NOW AVAILABLE' and 'FREE DOWNLOAD: Patient Radiation Handout'. The navigation bar includes 'home', 'about', 'faq's', 'calculate your risk', 'glossary', and 'contact'. The main heading is 'Calculate your risk' with a 'Help' icon. A dropdown menu is open under 'Plain Films (x-rays)', listing various study types. 'DEXA Scan (Bone Density)' is highlighted with a red box. To the right, a grey arrow points to the text 'Choose a study from the panels'. Below the arrow, it says 'Click on the panel titles to slide open additional studies.' At the bottom, the URL 'n/calculator/select\_study.php?id=36' is visible.

## #請點選(Standard Exam)

The screenshot shows the X-RAY RISK website. The logo is a blue square with white curved lines. The text 'X-RAY RISK' is in large blue letters, with '100%' below it. Below the logo is the tagline 'Promoting responsible imaging through patient and provider education'. On the right, there is a 'Login' button and a section for 'FAQ of the Month' titled 'Top 5 Ways to Decrease your Exposure to Medical Radiation'. Below that, it says 'NOW AVAILABLE' and 'FREE DOWNLOAD: Patient Radiation Handout'. The navigation bar includes 'home', 'about', 'faq's', 'calculate your risk', 'glossary', and 'contact'. The main heading is 'Calculate your risk' with a 'Help' icon. A dropdown menu is open under 'Plain Films (x-rays)', listing various study types. 'DEXA Scan (Bone Density)' is highlighted with a red box. To the right, the text 'Selected study: DEXA Scan (Bone Density)' is displayed. Below that, a grey button says 'Choose which type of a calculation'. A red box highlights the 'Standard Exam' button. Below the button, it says 'If you want to estimate risk from a recurring exam (yearly mammogram, dental x-rays, etc) click here'. At the bottom, the URL 'n/calculator/calculator-normal-studies.php?id=36' is visible.

#就可以看到下列網頁



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Study: **DEXA Scan (Bone Density)**

Gender: Male  Female

Age at Time of Study:  (years)

Number of Exams:

Effective Dose:  (mSv)

DLP (Optional for CT):  (mGy · cm)

Calculate

Total Effective Dose:	<input type="text" value="0"/> (mSv)
Additional Cancer Risk:	<input type="text" value="0.000000"/> (%)
Baseline Cancer Risk:	<input type="text"/> (%)
Baseline + Additional Risk:	<input type="text"/> (%)

To learn more about how these calculations are made, see the About page.

Plain Films (x-rays)

- Chest x-ray (2 views)
- Abdomen 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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Calculate

Total Effective Dose:	<input type="text" value="0"/> (mSv)
Additional Cancer Risk:	<input type="text" value="0.000000"/> (%)
Baseline Cancer Risk:	<input type="text"/> (%)
Baseline + Additional Risk:	<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% <span style="color:red">✘</span>
<b>Totals:</b>			<b>1</b>	<b>0.001</b>	<b>5.0E-6%</b>

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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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)



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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%
<b>Totals:</b>			<b>1</b>	<b>0.001</b>	<b>5.0E-6%</b>

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**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).

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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% <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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Sponsorship Opportunities

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