



معهد دسمان للسكري  
Dasman Diabetes Institute



KFAS

أحد مراكز  
Center

# RADIATION SAFETY INFORMATION

## ? WHAT IS X-RAY?

*X-rays*, also called radiation, are a form of energy that is similar to light and radio waves. Unlike light waves, x-rays have enough energy to pass through your body. As the radiation travels through your body, it passes through bones, tissues and organs differently, which allows us to create two-dimensional images of them using a computer. These images are examined by a radiologist who prepares the report for your doctor to help make an accurate diagnosis. X-rays are used in the following: radiography, computer tomography (CT), bone mineral densitometry (BMD) and dental x-ray at our Diagnostic Imaging Center in Dasman Diabetes Institute.







## 🛡️ HEALTH AND SAFETY EFFECTS

When radiation passes through your body, a part of it gets absorbed into your body and the remaining passes through. The portion that passes through your body is what is used to create the image. The absorbed x-rays contribute towards patient dose.


The whole body radiation dose is called effective dose and is usually measured in millisieverts (mSv). Effective dose allows your doctor to evaluate your risk and compare it to common, everyday sources of exposure such as a natural radiation\*. For example, the amount of radiation from one adult chest x-ray (0.1 mSv) is similar to 10 days of natural radiation from your surroundings.

The categorized chart below gives us a general idea about the amount of exposure from commonly performed exams.

CT SCAN*		
Type of radiological procedure	Approximate effective radiation dose	Comparable to natural background radiation for:
<b>HEAD</b> 	2 mSv	8 months
REPEATED WITH AND WITHOUT CONTRAST MATERIAL	4 mSv	16 months
<b>ABDOMEN AND PELVIS</b> 	10 mSv	3 years
REPEATED WITH AND WITHOUT CONTRAST MATERIAL	20 mSv	7 years
<b>SPINE</b> 	6 mSv	2 years
<b>CHEST</b> 	7 mSv	2 years

X-RAY		
Type of radiological procedure	Approximate effective radiation dose	Comparable to natural background radiation for:
<b>SPINE</b> 	1.5 mSv	6 months
<b>CHEST</b> 	0.1 mSv	10 days
<b>EXTREMITY</b> (HAND, FOOT, ETC.) 	0.001 mSv	3 hours
<b>DENTAL</b> 	0.005 mSv	1 day

BMD		
Type of radiological procedure	Approximate effective radiation dose	Comparable to natural background radiation for:
<b>EXTREMITY</b> (HAND, FOOT, ETC.) 	0.001 mSv	3 hours

**NOTE:** These are approximate values for adult patients. Pediatric patients vary in size and hence doses will vary significantly. For more information on radiation safety in pediatric imaging, visit: <http://www.imagegently.org/Roles-What-can-I-do/Parent>

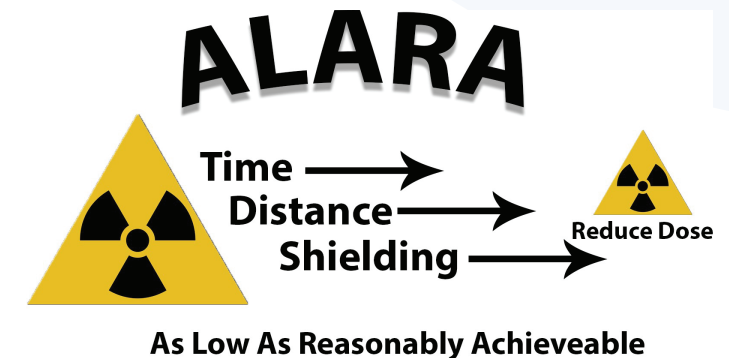
\*With the current technology and new techniques used at DIC, significant reduction in CT radiation dose has been achieved, with expectation of further reduction in the near future.



## FOR YOUR SAFETY:

### How do we Minimise Radiation Risk?

- The risk for most imaging procedures is relatively low and with no adverse effects.
- Much care is taken in order to follow the ALARA principle, which means the exposure is kept 'As Low As Reasonably Achieved' to ensure minimum dose to the patient.



- The benefit of getting an accurate diagnosis for proper treatment by your doctor outweighs the risk of the minimal radiation exposure.
- Imaging is done only when there is a clear medical benefit.
- You may talk to your doctor or radiologist if you have concerns about the risks of a procedure you are about to undergo.



All radiologists and technologists in our Institute are required to have a license (Medical, Ionizing and MRI licenses) to keep with requirements of Ministry of Health (MOH) as well as RPD (Radiation Protection Department).

- Lead shielding is used appropriately depending on the type and region of the interest to reduce exposure to other parts of your body. Only the area indicated by your doctor will be imaged. (The X-rays are produced only for a moment when the switch is on. No radiation remains after the switch is turned off.)



**DAILY  
QUALITY ASSURANCE**  
tests and regular checks  
are also performed to  
ensure that equipment  
is functioning well.

- When possible, alternate investigations which do not use radiation such as ultrasound or MRI may be used instead of X-ray tests (provided it is requested through the referring doctor).



## HOW CAN YOU ENSURE YOUR SAFETY

If you have X-rays taken frequently, it is very helpful to keep a record of your X-ray history. This will serve as a guide for your doctor whether to order an X-ray exam for you or not.

**For women** who are likely to be pregnant, it is very important to tell your doctor before getting an X-ray. Depending on the medical need, the x-rays will be done right away or postponed to a later day. In case you have to get an X-ray while pregnant, extra caution will be taken to protect the baby from the radiation. In general, for all women in reproductive age group, the 'ten-day rule' is followed. This means that whenever possible, it is safer to get your X-ray done within the first ten days of the onset of menstruation.



## INQUIRIES



**DIRECT LINE:** +965 2221 6047  
**CALL CENTER:** +965 1877 877 ext. 7000, 7001



**WHATSAPP:** +965 6505 5011



**WORKING HOURS**  
Sunday to Thursday, 7:30 AM - 3:00 PM



## LOCATION

We are situated at the Basement Level 1 (B1) within the DDI building. Ample parking is available in the premises.



<https://www.radiologyinfo.org/en/info.cfm?pg=safety-xray>  
<https://www.dartmouth-hitchcock.org/documents/X-Ray-Brochure.pdf>  
<https://www.iaea.org/resources/rpop/patients-and-public/x-rays>



WE PROUDLY SERVE

1st Takaful Insurance Company

Ain Takaful Insurance Company

Aman Takaful Insurance Company

AXA Insurance (Gulf)

AXA PPP International

Bahrain Kuwait Insurance Company

Boubyan Takaful Insurance Company

# Enaya Insurance Company

Ghazal Insurance Company

Gulf Insurance Group (Takaful Unit)

Gulf Insurance & Reinsurance Company

Gulf Takaful Insurance Company

ILAF Takaful Insurance Company

KFH Takaful Insurance Company

Kuwait Insurance Company

Libano-Suisse Insurance Company

National Takaful Insurance Company

United Insurance Company

Wethaq Takaful Insurance Company

ZAIN Mobile Telecommunication Company

*This list is constantly updated. Please check with our reception for other insurances.*



**dasmaninstitute**



**dasmaninstitute**



**dasmaninstitutekwt**



**dasmandiabetesinstitute**

## NOTES