

# Best Practices for Nuclear Medicine



*Advancing to the next level.*



# Leading the Way for Best Practices in Nuclear Medicine

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Nuclear Medicine plays a vital role in the treatment options for mCRC patients with unresectable liver tumors. Drawing up a specified activity is integral for a hospital to provide customized treatment that is optimal for their patients.

- Customized dosing for each clinical situation**
- Same-day dose draw**
- Supports time-sensitive clinical situations**



## Patients First

Working to improve the quality and longevity of patients' lives.

# FLEXdose Delivery Program

FLEXdose Delivery Program offers 3 delivery options 5 days a week.

## Next Day Dose Program / Map and Treat

3 day Pre-calibration	2 day Pre-calibration	1 day Pre-calibration	Same day Pre-calibration
7.2* GBq	5.6* GBq	4.3* GBq	3.0† GBq

\*All activity based on 8am ET delivery

†Day of calibration at 6pm ET

All deliverable the day after ordering (subject to availability)

## Empowering You to Deliver Customized Treatment

You can draw up the same activity with more or less spheres, enabling you to provide a customized dose that is optimal for each patient.

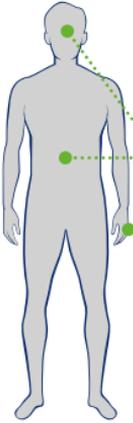


### Safety Check

Always check the date of calibration to confirm if the vial is a 1, 2 or 3 day pre-calibrated vial.

Calibration date:  
2019-07-12

# Your Safety Is Our Priority



## U.S. Nuclear Regulatory Commission Occupational Dose Limits

Whole Body (DDE)	<b>5,000 mrem/yr</b>
Extremities, Skin (SDE)	<b>50,000 mrem/yr</b>
Lens of Eye (LDE)	<b>15,000 mrem/yr</b>

## Dose Draw Hand Exposure Evaluation

Sirtex performed hand dose testing on vials exceeding the maximum deliverable activity and the results showed the following:

## Evaluation of SIR-Spheres Y-90 resin microspheres Vials Containing up to 11.8GBq<sup>1</sup>

SIR-Spheres Y-90 resin microspheres activity	Mean radiation exposure to the dominant hand per dose draw	Mean radiation exposure to the non-dominant hand per dose draw	Exposure values
Up to 11.8GBq	12 mrem	21 mrem	Below 35 mrem**

\*\*35 mrem is the exposure value associated with a 3GBq dose preparation (reported in the SIR-Spheres Y-90 resin microspheres package insert)

## Conclusion

With the expanded delivery options, testing demonstrates that when prepared per the instructions for use, radiation exposure to Nuclear Medicine personnel continues to be low.



# Radiation Safety in Nuclear Medicine

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## Shielding devices

- 1 L-block
- 2 Lead pig
- 3 Syringe shield
- 4 V-Vial holder



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## Time considerations

- Have all dose preparation equipment prepared prior to drawing a dose
- Survey prep area, hands, and body after dose draw completion

## Distance considerations

- Use remote handling tools (e.g., forceps, tongs)
- Draw Y-90 resin dose in an area separate from diagnostic doses

## Shielding considerations

- Use shielding devices
- Wear personal protective equipment (e.g., gloves, lab coat)
- Remove vent needle, recap lead pig, and remove hot items from drawing area immediately after draw is complete

1. Sirtex. Technical Bulletin: Safety Evaluation of Hand Doses for SIR-Spheres® Yttrium-90 (Y-90) Resin Microspheres Shipped Through the FLEXdose Delivery Program. May 20, 2019.

**Caution:** Federal (USA) law restricts this device to sale by or on the order of a physician. **Indications for Use:** SIR-Spheres Y-90 resin microspheres are indicated for the treatment of unresectable metastatic liver tumors from primary colorectal cancer with adjuvant intrahepatic artery chemotherapy (IHAC) of FUDR (Floxuridine). **Warnings / Precautions:** Inadvertent delivery of the microspheres to locations other than the intended hepatic tumor may result in local radiation damage. Due to the radioactivity and the significant consequences of misplacing the microspheres in situ, this product must be implanted by physicians who have completed the Sirtex TEC training program. A SPECT scan of the upper abdomen immediately after implantation is recommended. Patients may experience abdominal pain immediately after administration and pain relief may be required. H-2 blocking agents may be administered the day before implantation and continued as needed to reduce gastric complications. **Side Effects:** Common side effects are fever, transient decrease of hemoglobin, mild to moderate abnormality of liver function tests, abdominal pain, nausea, vomiting, and diarrhea. Potential serious effects due to exposure to high radiation include acute pancreatitis, radiation pneumonitis, acute gastritis, radiation hepatitis, and acute cholecystitis. **Contraindications:** SIR-Spheres Y-90 resin microspheres should not be implanted in patients who have either had previous external beam radiation therapy to the liver; ascites or are in clinical liver failure. This device is contraindicated in patients with markedly abnormal synthetic and excretory liver function tests; greater than 20% lung shunting of the hepatic artery blood flow, or >30 Gy radiation absorbed dose to the lungs, as determined by the 99mTc MAA scan; disseminated extra-hepatic malignant disease, and portal vein thrombosis. This device should not be implanted in patients determined via angiogram to have an abnormal vascular anatomy that would result in significant reflux of the hepatic arterial blood flow to the stomach, pancreas, or bowel. **General Information:** SIR-Spheres Y-90 resin microspheres may only be distributed to a duly licensed or accredited facility capable of handling therapeutic medical isotopes. This product is radioactive and should thus be handled in accordance with all applicable standards and regulations. **Consult the Instructions for Use ([www.sirtex.com](http://www.sirtex.com)) for a complete listing of indications, contraindications, side effects, warnings, and precautions.**



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