Vivere IMAGING
INVESTED IN SCIENCE

MANAGEMENT OF CT CONTRAST AGENT - INDUCED ADRs

US FDA REGISTERED API
ASSURED QUALITY

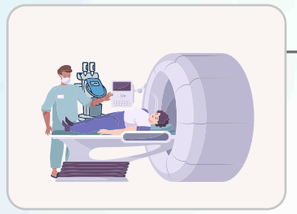
Contrast Media Warming: A Simple Step to Prevent Chills & Shivering*

- Warming contrast media lowers viscosity, making it easier to inject
- Reduced viscosity means less resistance during hand or power injection via IV or intra-arterial catheters
- In small-bore catheters, turbulent flow makes viscosity and flow behave unpredictable

NO!

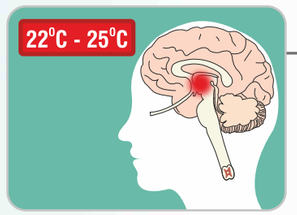
Storage at Room Temperature

Iodinated Contrast Media is stored at room temperature (22–25°C), where it remains stable but has **high viscosity**



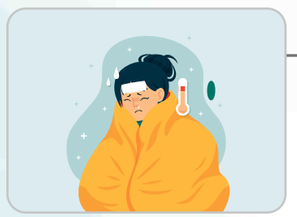
Injection at 22–25°C

If administered at room temperature (22–25°C) to the patient using a power injector or by hand, it makes the injection more difficult and **uncomfortable for the patient**



Activation of Thermoreceptors

A significant difference between body temperature and the vial may activate brain thermoreceptors, potentially **triggering an adverse drug reactions**



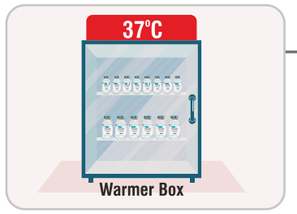
Patient Discomfort

Patient experiences **chills and shivering**

YES!

Storage at Room Temperature

Iodinated Contrast Media is stored at room temperature (22–25°C), where it remains stable but has **high viscosity**

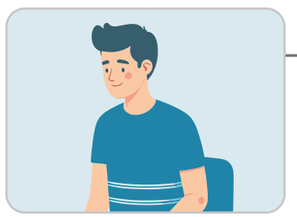


Pre-warming to 37°C

Before administration, Iodinated Contrast Media is placed in a contrast warmer set to 37°C. **Warming reduces its viscosity**

Injection at 37°C

If administered at body temperature (37°C) using a power injector or by hand, it makes injection **easier and more comfortable for the patient**



No patient discomfort

Patient **doesn't experience** chills and shivering

Injection Rates, Contrast Volumes & ADR Risk

Injection rates for iodinated contrast media are tailored based on the type of scan, the required contrast volume, and the associated risk of adverse drug reactions (ADRs)

Injection Rate (mL/sec)	Common Applications	Typical Contrast Volume	ADR Risk (Generalized)	Safe Range to Minimize ADRs	Reference
1.0-2.0	Routine brain CT, Pediatric CT, Extremity CT	50-80 mL	Very Low	1.5 mL/sec	ACR Manual on Contrast Media v10.3
2.0-3.0	Chest CT, Portal venous abdomen, Brain	80-100 mL	Low	2.5 mL/sec	ESUR Guidelines v10.0, ACR
3.0-4.0	Neck CTA, CT urography, Arterial abdomen	90-120 mL	Low-Moderate	3.5 mL/sec (with 20G IV)	ACR, ESUR, CT Angiography Protocols
4.0-5.0	CTPA, Trauma scans, Enterography, Aortic CTA	100-150 mL	Moderate	4.0 mL/sec with wide-bore IV access	ACR, ESUR, CT Pulmonary Angio Guidelines
5.0-6.0	CT coronary angiography, CT perfusion	70-100 mL	Moderate-High	5.0 mL/sec with 18G or power injector	ACR CTA Guidelines, ESUR 2023
>6.0	Research protocols, Cardiac viability	Variable	High (not recommended routinely)	Avoid unless central line or port used	ACR High-Risk Contrast Use Guidelines

Reference:
*ACR Manual on Contrast Media, 2024, 44-45.

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