

Computed Tomography (CT) Acquisition and Reconstruction

Standardized CT Protocols are difficult to produce in a province as large as British Columbia. There are many CT departments in the province each with unique local environments, including the type of CT scanner available in a given radiology department. The protocols that are set out here are to be used as guidelines to help CT departments produce high quality images given the equipment available to them. The overarching goal of these CT protocols is to eliminate the need to rescan patients, particularly those patients who are initially assessed, imaged and stabilized in one hospital but transferred to another hospital for more definitive care.

Minimum necessary hardware that should be available in a CT department performing trauma imaging should include:

- Multi-detector CT (MDCT): We recommend a minimum 16-slice in order to obtain isotropic voxels
- Power Injector: With associated consumables
- Intravenous contrast: Minimum 320 concentration

Table 4. IV, Oral, Rectal and Cystographic Contrast Protocols

Contrast	Recommendation
Intravenous contrast injection with a power injector	<ul style="list-style-type: none"> • 4-5cc/sec of 320-350 concentration for 120-150cc or equivalent iodine amount
Oral contrast	<ul style="list-style-type: none"> • Aqueous such as gastrograffin 500cc at 2% if patient is able to ingest • Mix 20cc gastrograffin (Telebrix®) with 460cc water for a total of 500cc • Consider administering through nasogastric tube if patient is unable to ingest (e.g. with decreased level of consciousness) • 250cc should be adequate to fill the stomach
Rectal contrast	<ul style="list-style-type: none"> • Requires rectal tube • Aqueous contrast such as gastrograffin 500cc at 2% through rectal tube • Mix 20cc gastrograffin (Telebrix®) with 480cc water for a total of about 500cc • 500cc should be adequate to fill the colon via a rectal tube
Cystographic contrast	<ul style="list-style-type: none"> • If tolerable, administer retrograde contrast consisting of either: <ul style="list-style-type: none"> ○ 300cc iohalamate meglumine injection USP 17.2% (Cysto-Conray®), or ○ 300-500cc mixture of one part Iohexol (Omnipaque 350®) to 2.5 parts water