IsoTarget — Mac User Guide

Washburn University Radiation Therapy

Purpose: IsoTarget lets you practice orthogonal DRR/KV image matching. This guide explains how to install, where files must go, how to run the app, and the basic controls.

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1) What you will download

- **IsoTarget_mac.zip** – contains the Mac app (**IsoTarget.app**).
- **IsoTarget_Datasets.zip** – contains image datasets in folders.

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2) Where files should live (IMPORTANT)

You can put **IsoTarget.app** almost anywhere (Applications, Desktop, etc.).

Datasets (default location):

```
~/Desktop/IsoFusionData/<DatasetName>/
  1_*.png/.jpg/.tif   ← DRR AP
  2_*.png/.jpg/.tif   ← KV  AP
  3_*.png/.jpg/.tif   ← DRR LAT
  4_*.png/.jpg/.tif   ← KV  LAT
```

- The filenames must start with **1**, **2**, **3**, **4** as shown.
- Some instructor builds also accept an **IsoFusionData** folder sitting **next to the app** (in the same folder as `IsoTarget.app`). If your instructor says this is enabled, you may use that instead of the Desktop location.

~ means your user home folder (e.g., `/Users/yourname/Desktop/IsoFusionData/...`).

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3) Install & first run

1. **Download** `IsoTarget_mac.zip` and `IsoTarget_Datasets.zip` from D2L.
2. **Unzip** `IsoTarget_mac.zip` → you get **IsoTarget.app**.
3. **Unzip** `IsoTarget_Datasets.zip` to your **Desktop** so you end with:
4. `~/Desktop/IsoFusionData/<DatasetName>/(1*, 2*, 3*, 4*)`
5. **Open the app**:
   - Right-click **IsoTarget.app** → **Open** → **Open** (bypasses Gatekeeper warning for unsigned educational apps).
   - The first run shows a **Terms of Service** window. Check the box and click **I Agree**.
   - A splash screen appears, then the app opens.

(If you prefer, drag `IsoTarget.app` into Applications first; the steps are otherwise the same.)

4) Daily use (quick start)

1. On the **right panel**, open **Dataset (autoload)** and choose a dataset you unzipped.
2. Click a **thumbnail** (DRR AP, KV AP, DRR LAT, KV LAT) to select which image you'll adjust/filter.
3. Click **Apply Filter** to apply a filter (see list below).
4. Use **Brightness / Contrast / Sharpness** sliders (top-right) to fine-tune the **selected** image.
5. Use **Blend** and **Color Overlay** to compare DRR and KV.
6. Use **Restore to Default** to reset transforms, blend, and adjustments.

5) Controls for matching

- **Click** inside **AP Match** or **Lateral Match** to activate that view.
- **Mouse wheel** on **AP view** – rotate the AP KV image (fine steps).
- **⌘/Ctrl + Mouse wheel** – **true zoom toward your cursor** (both views).
- **Click & drag** in a view – reposition KV relative to DRR.
- **Arrow keys** – nudge:
  - Left/Right = move KV in the **active** view
  - Up/Down = move KV vertically in **both** views
- **Undo** = **⌘/Ctrl + Z**, **Restore** = **⌘/Ctrl + R**.

Tips: Start with blend ≈ 50%. Rotate AP to align landmarks; then nudge/zoom to fine-tune.

6) Filters (Radiation-oncology oriented)

Select a thumbnail, then **Apply Filter**.

- **Washburn (Ichabod) Balance** – balanced bone & soft tissue (equalize + high-pass + sharpen).
- **Low-Dose Boost (Rizzler)** – strong bony edge clarity for noisy/low-exposure KV (crisp edges).
- **Bone Emphasis (Collins)** – light denoise + mild sharpen for grainy images.
- **Local Contrast (Jayhawk)** – micro-contrast to reveal small landmarks.
- **Soft Tissue Enhance** – gentle denoise + midtone lift + mild contrast.
- **RadFilter (Match Assist)** – multi-scale detail boost for **hard-to-match** exposures.

Try **Washburn** first; switch to **Jayhawk/RadFilter** for subtle landmarks, or **Rizzler/Collins** for noisy images where bony edges need to pop.

7) What can be moved (and what cannot)

App (IsoTarget.app):

- You can move or rename the app anywhere (Applications, Desktop, a class folder, etc.).

Datasets:

- Keep datasets in `~/Desktop/IsoFusionData/` (recommended), or—if your instructor enabled it— inside an **IsoFusionData** folder that sits **next to the app**.
- You can add/remove dataset folders at any time.

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8) Troubleshooting

- **"Dataset not found"** → Ensure you unzipped to `~/Desktop/IsoFusionData/...` and filenames start with 1, 2, 3, 4.
- **Rotation doesn't work** → Only the **AP** view rotates. Click inside AP first.
- **Zoom doesn't work** → Hold ⌘/**Ctrl** while using the mouse wheel; zoom follows your cursor.
- **Gatekeeper warning** ("app can't be opened") → Right-click **IsoTarget.app** → **Open** → **Open**, or **System Settings** → **Privacy & Security** → **Open Anyway**.
- **Nothing happens on double-click** → Try right-click → **Open** once; macOS then "remembers" the app is allowed.

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9) License reminder

IsoTarget is for **educational use only** by **Washburn University Radiation Therapy** students and authorized faculty/staff. It is **not** a medical device and must not be used for diagnosis, treatment, or patient care.

For help, contact your instructor.