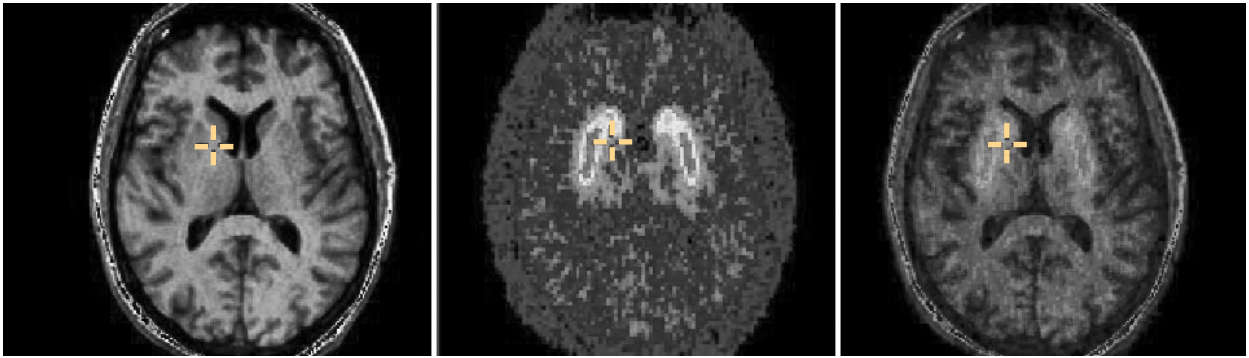
PET and MRI images of a male alcoholic



Pictures of the same level of the brain of a 40-year-old male alcoholic. Left: image obtained by magnetic resonance imaging (MRI). Center: view obtained by positron emission tomography (PET) after the administration of the agent [11C]raclopride, which binds to the dopamine receptor. Right: image resulting from the simultaneous combination of MRI and PET. Each picture shows the front of the brain at the top, the back of the brain at the bottom, the left side of the brain at the left, and the right side at the right of the picture. The cross in the images is located between two brain structures: the putamen, to the left of the cross, and the caudate, to the upper right. The MRI image clearly shows the anatomic structures. The PET image demonstrates that both the putamen and the caudate have high densities of dopamine receptors, as indicated by the yellow. However, the borders of these anatomical structures are blurred on the PET image, making them appear as a single structure. Superimposing the MRI and PET images yields an image that facilitates the identification of the distinct borders of anatomical structures such as the putamen and the caudate.

Source: Wong, D.F., et al. Positron emission tomography—A tool for identifying the effects of alcohol dependence on the brain. *Alcohol Research & Health* 27(2):161–174, 2003.

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