Introduction
Memory impairment is not considered a core cognitive feature of ADHD-CT, although it is associated with impairments in attentional and executive functions. This study investigates visuospatial memory impairment, in particular encoding and retrieval aspects, in children with ADHD-CT who are stimulant medication naïve and medicated with stimulant medication. We hypothesise that ADHD-CT will be associated with visuospatial memory encoding but not retrieval deficits and that stimulant medication should ameliorate these encoding deficits.
Method

6-12 year old children, identified with ADHD-CT-stimulant medication naïve (N=62) ADHD-CT-stimulant medicated (N=58) defined by
(1)-parental structured clinical interview;
(2)-parent and teacher dimensional report subscale scores -core symptom domains of ADHD-CT-
greater than 1.5 standard deviations above the mean for a given child’s age and gender
Healthy control participants (N=39)
Age-, gender- and full scale IQ- matched

-random assignment to medicated group
-stimulant medication dosage titrated to an optimal level using Tannock et al.’s (1995) method
Dexamphetamine N=32 (14.29 (5.68))
Methylphenidate N=26 (25.81 (11.34))

-comorbid diagnoses of major depressive disorder or conduct disorder excluded;
oppositional defiant patterns of behaviour and language learning difficulties matched between the ADHD-CT groups
ADHD-CT children - consecutively referred for assessment because they were not responding to usual clinical psychological management approaches delivered at a community primary care level; met the inclusion criteria of living in a family home and attending normal primary schools. All IQs > 70; none had overt neurological disease or psychotic symptoms

**Results**

Response accuracy of each group at each condition of the DMTS task

MTS = matching to sample; DMTS 0/4/12 = delayed matching to sample 0/4/12 seconds delay; Controls = healthy participants; ADHD-M = ADHD combined type medicated participants; ADHD-U = ADHD combined type participants, medication naïve
**Discussion**

Both medication naïve and medicated ADHD-CT groups demonstrated impairment in visuospatial memory, which was delay-independent

the encoding rather than retrieval phase of visuospatial memory was dysfunctional

deficits in a visuospatial memory task reflect attentional deficits rather than being specifically due to dysfunction of the medial temporal lobe explicit memory system.