Beyond the left hemisphere: language impairments after right-hemisphere stroke

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INTRODUCTION

Language deficits after right-hemisphere damage (RHD) have traditionally been attributed to inverted (left-handers) or atypical (right-handers) language lateralization

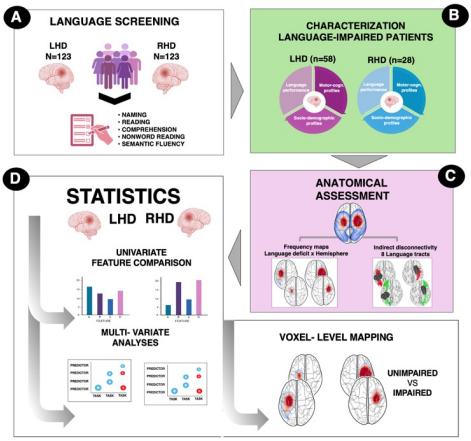
Growing evidence shows language processing is often bilateral and largely independent of hand asymmetries

These findings challenge earlier lateralization assumptions and motivate a systematic, quantitative investigation of language outcomes following RHD when compared to left-hemisphere damage (LHD)

AIM: To determine **the prevalence and characteristics of language deficits after RHD** in a behaviourally unselected first-ever stroke cohort, in terms of:

a) language & clinical patterns
b) lesion topography
c) predictors of impairment

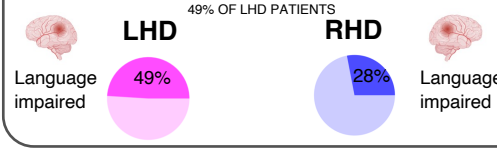
METHODS



RESULTS

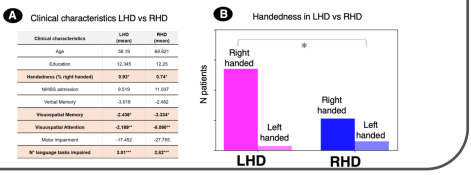
1. PREVALENCE.

LANGUAGE DEFICITS AFFECT 28% OF RHD AND 49% OF LHD PATIENTS



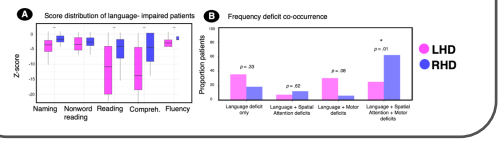
2. CLINICAL PROFILES.

LANGUAGE-IMPAIRED RHD PATIENTS:
A) INCREASED LEFT-HANDEDNESS B) HIGHER MEMORY AND SPATIAL ATTENTION DEFICITS



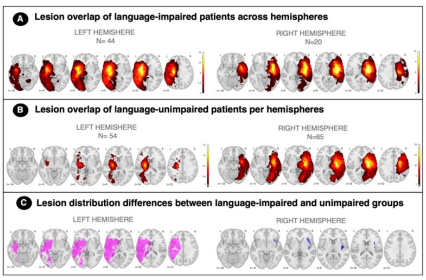
3. LANGUAGE PROFILES.

LANGUAGE DEFICITS IN RHD ARE:
A) MILDER B) CO-OCUR WITH MOTOR AND SPATIAL ATTENTION DEFICITS



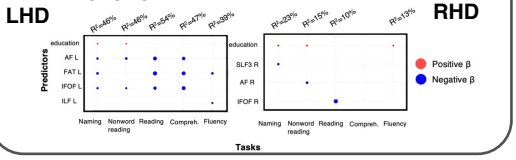
4. LESION TOPOGRAPHY.

LANGUAGE DEFICITS IN RHD ARE NOT LINKED TO SPECIFIC ANATOMY



5. NEUROANATOMICAL AND DEMOGRAPHIC PREDICTORS.

DIFFER BETWEEN LHD AND RHD



CONCLUSIONS

Language deficits after RHD:

1. **Less frequent and severe than after LHD, yet affect one quarter of patients**, most of whom are **right-handed**
→ previous reports of rarity suggest under-detection and bias in sampling

2. **Frequently coincide with other right-hemisphere controlled functions**
→ reflects bilateral representation rather than 'functional switch'

3. **Exhibit less specific anatomy**
→ fewer homologous tracts explain outcomes → variable functional organization in the right-hemisphere

Clinical implications:

Neuropsychological assessment after unilateral stroke should extend beyond textbook lesion laterality profiles in both left-handers and right-handers

Individual variability in functional cerebral asymmetries may contribute to differences in stroke outcomes