

## **Non-contrast MRA of the Finger and Toe Using time-Spatial Labeling Inversion Pulse (time-SLIP) technique**

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### **Purpose**

- 1.To selectively visualize arteries of the finger and toe without contrast media using time-spatial labeling inversion pulse (time-SLIP) MRA.
- 2.To optimize and compare this technique with other non-contrast MRA methods.
- 3.To display clinical cases of hand and foot MRA.

### **Content**

- 1.Basic principles of non-contrast time-SLIP MRA.
- 2.Optimization of examination parameters and positions.
- 3.Efficacy of depicting the arterial arch and digital arteries in the finger and toe using the time-SLIP technique compared with other non-contrast MRA techniques, 2D time-of-flight and MR digital subtraction angiography using ECG-gated 3D half Fourier FSE applied with Flow-spoiled Gradient Pulses (Flow-spoiled FBI).
- 4.Combination with swap phase encode extended data (SPEED) acquisition.
- 5.Correlation with age in non-contrast toe MRA.
- 6.Several diseases in which non-contrast MRA of the whole hand and foot was effective.

### **Summary**

Due to the recent concerns of Gadolinium-related Nephrogenic Systemic Fibrosis, non-contrast MRA alternatives have gained interest. The time-SLIP technique allows selective visualization of small and slow flow arteries, which is of increasing significance in our aging population.

### **References**

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- 2) Miyazaki M, et al. JMRI, 8:505-507; 1998
- 3) Kanazawa H and Miyazaki M, ISMRM 2002, p140

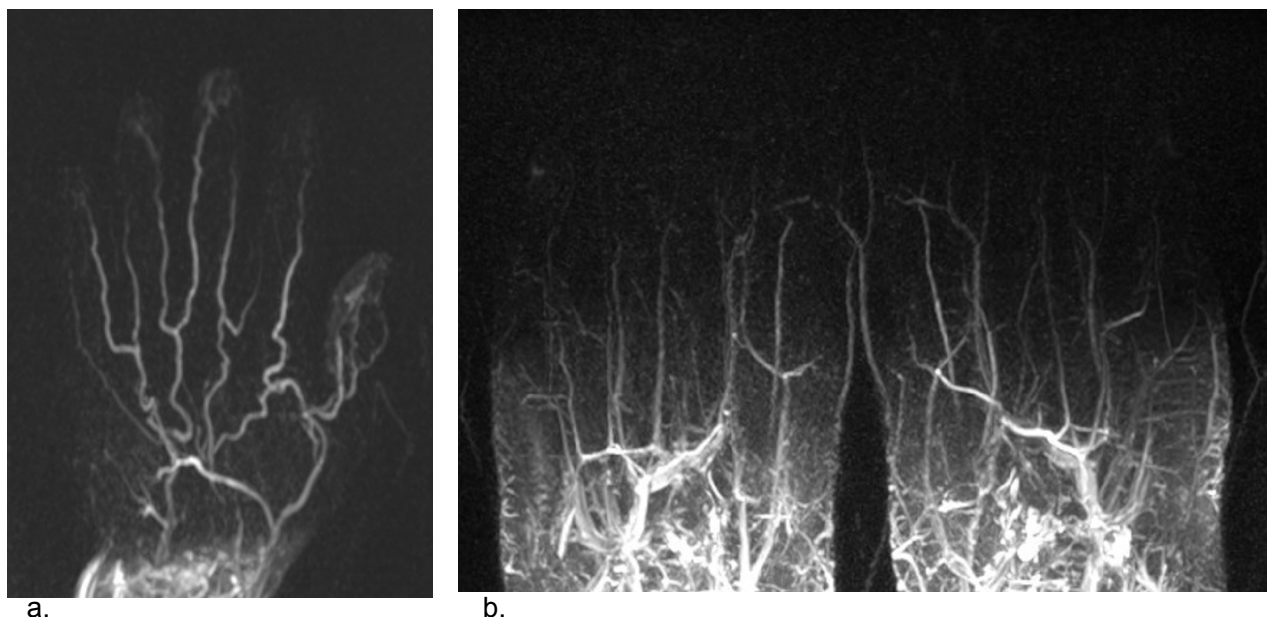


Fig. 1) Non-contrast time-SLIP MRA of the finger on a 28-year-old male (a) and the toes using SPEED acquisition on a 23-year-old male (b). Note that Time-SLIP MRA was effective of depicting small, tortuous, and branched arteries.