



# EMBOLD™ Detachable Coil System | Pre-Clinical Comparative Study

A pre-clinical porcine model showing Embold Coil System enables shorter time to occlusion and fewer coils to occlude compared to competitor embolic coils.

Dr. Christopher Grilli | Society of Interventional Radiology, 2024.

## STUDY OBJECTIVE AND DESIGN:

- Primary objective was to evaluate the number of coils needed to achieve complete occlusion in the peripheral vasculature.
- The secondary objectives were to measure and compare the time to occlusion, coil length implanted, procedure time, fluoroscopy time, and coil packing density.

## METHOD:

Evaluation conducted in a pre-clinical porcine model. Coils were deployed every 3 minutes until complete occlusion was achieved. Complete occlusion was defined as TIMI Grade 0 (no antegrade flow beyond the point of occlusion) and assessed by the physician evaluator. Contralateral vessel pairs of comparable diameters were used for each assessment. For the Embold™ Soft Coil comparisons, 3 replicates were conducted. For the Embold™ Fibered Coil, 4 replicates were conducted.

- For Embold Fibered Coil, comparable coil lengths were evaluated to assess fiber vs. metal impact: Ruby Standard 6 mm x 20 cm/ Embold Fibered 6 mm x 20 cm.
- For Embold Soft Coil comparisons, the longest coil length commercially available for each coil type was used: Concerto 4 mm x 10 cm/ Embold Soft 4 mm x 30 cm and Ruby Soft 6 mm x 30 cm/ Embold Soft 6 mm x 60 cm.

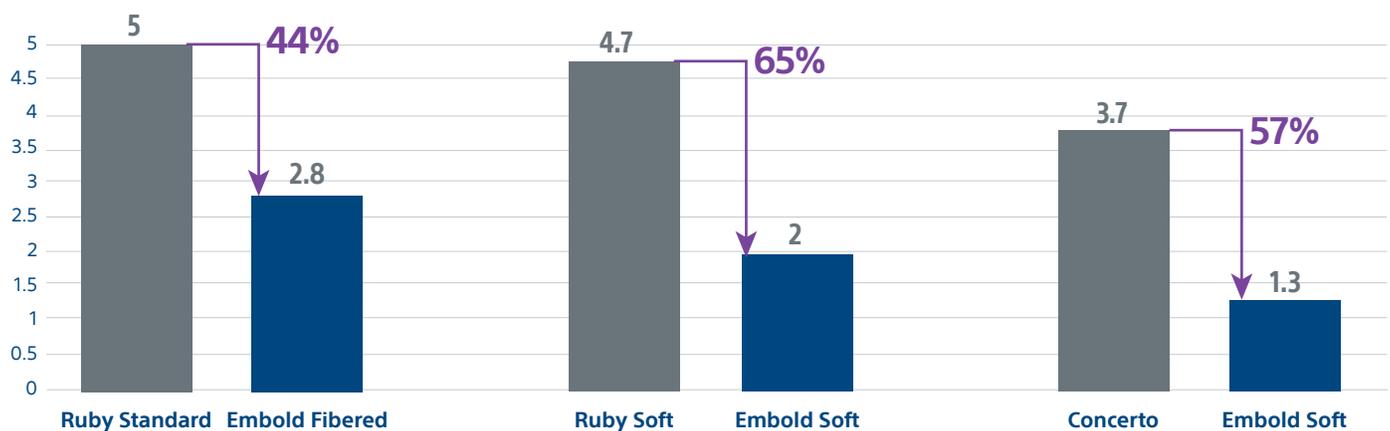
## KEY RESULTS:

### Fewer Coils, More Procedural Efficiency

Embold Fibered Coil required **44% less coils than** Penumbra Ruby Standard

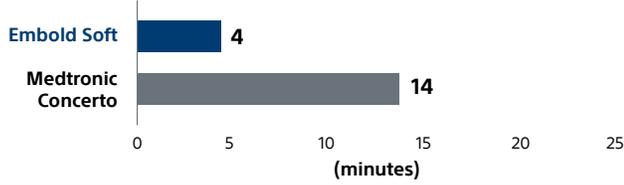
Embold Soft Coil required **65% less coils than** Penumbra Ruby Soft

Embold Soft Coil required **57% less coils than** Medtronic Concerto

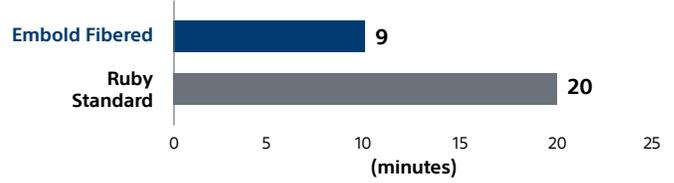


## Faster occlusion time

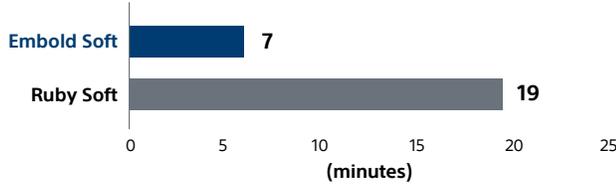
### TIME TO ACHIEVE COMPLETE OCCLUSION (TIMI = 0) Embold Soft Coil vs. Concerto (4 mm)



### TIME TO ACHIEVE COMPLETE OCCLUSION (TIMI = 0) Embold Fibered Coil vs. Ruby Standard (6 mm x 20 cm)

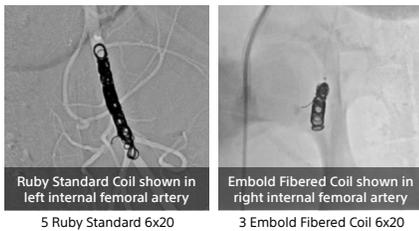


### TIME TO ACHIEVE COMPLETE OCCLUSION (TIMI = 0) Embold Soft Coil vs. Ruby Soft (6 mm)

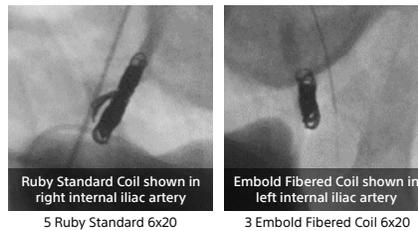


## PRECLINICAL CASE EXAMPLES:

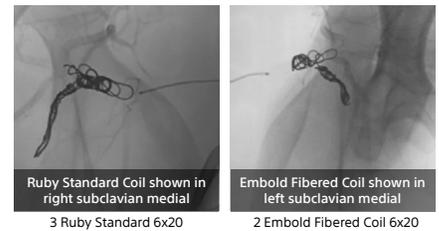
### 5 vs 3 Coils



### 5 vs 3 Coils



### 3 vs 2 Coils



## CONCLUSION:

The Embold Coil System required less coils and produced a faster time to occlusion than competitive embolic coils. Results show fewer coils used per case, thereby translating into shorter procedure time and more efficiency.

1. Evaluation conducted in a pre-clinical porcine model. Coils were deployed every 3 minutes until complete occlusion was achieved. Complete occlusion was defined as TIMI Grade 0 (no antegrade flow beyond the point of occlusion) and assessed by the physician evaluator. Contralateral vessel pairs of comparable diameters were used for each assessment. For Embold Soft comparisons, 3 replicates were conducted. For Embold Fibered, 4 replicates were conducted. For Embold Soft comparisons, the longest coil length commercially available for each coil type was used: Concerto 4mm x 10cm/Embold Soft 4mm x 30cm and Ruby Soft 6mm x 30cm/Embold Soft 6mm x 60cm. For Embold Fibered, comparable coil lengths were evaluated to assess fiber vs. metal impact: Ruby Standard 6mm x 20cm/Embold Fibered 6mm x 20cm.

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