



OSAC Research Needs Assessment Form

Title of research need: Healing rates of skeletal injury, especially in children

Keywords: Skeletal Injury, Healing Rate, Pediatric, Elderly

Submitting subcommittee(s): Anthropology **Date Approved:** 1/28/16

(If SAC review identifies additional subcommittees, add them to the box above.)

Background information:

1. Description of research need:

Accurate age estimation of skeletal injury may be paramount in the adjudication of pediatric and elder abuse cases; yet, there is a paucity in the research focused on skeletal injury healing rates. Current understanding is primarily based on practitioner experience and limited radiological studies. Furthermore, in terms of child abuse, radiology studies tend to focus on an older population than that most commonly affected by abuse, a population known to have different rates of healing

2. Key bibliographic references relating to this research need:

Sanchez TR et al. Retrospective evaluation and dating of non-accidental rib fractures in infants. Clin Radiol. 2013; 68(8):467-71.
Klotzbach et al. Post-mortem diagnosis and age estimation of infants' fractures. Int J Legal Med. 2003; 117(2):82-9.
Kleinman PK, et al. Radiologic contributions to the investigation and prosecution of cases of fatal infant abuse. N Engl J Med. 1989; 320(8):507-11

3a. In what ways would the research results improve current laboratory capabilities?

More complete understanding of skeletal injury healing rates in infants, young children and elderly individuals would allow for more precise timing of traumatic events potentially limiting possible perpetrators.

3b. In what ways would the research results improve understanding of the scientific basis for the subcommittee(s)?

The research would improve the subcommittee’s understanding of age specific healing rates and biological factors that affect healing rates. The research results would enable practitioners to more accurately estimate time since injury, specifically in children and elderly individuals.

3c. In what ways would the research results improve services to the criminal justice system?

Accurate timing of traumatic injury in children and elder abuse allows law enforcement to appropriate focus their investigation.

4. Status assessment (I, II, III, or IV): I

	Major gap in current knowledge	Minor gap in current knowledge
No or limited current research is being conducted	I	III
Existing current research is being conducted	II	IV

This research need has been identified by one or more subcommittees of OSAC and is being provided as an informational resource to the community.

Subcommittee

Approval date:

(Approval is by majority vote of subcommittee. Once approved, forward to SAC.)

SAC

1. Does the SAC agree with the research need? Yes No

2. Does the SAC agree with the status assessment? Yes No

If no, what is the status assessment of the SAC:

Approval date:

(Approval is by majority vote of SAC. Once approved, forward to NIST for posting.)