

Call GF
Number:

Location:
Maxcost: \$25 IFM

DateReq: 2/10/03 Yes
Date Rec: 2/11/03 No
Borrower: NXW Conditional

ILL: 3687089 LenderString: *NMW,NRC,NDK,NDK,NOH

Title: Journal of neurosurgery.

Author:

Article: J. E. Bogen: Modification of Aneurysm

Vol: 41 No.: Date: 1974 Pages: 519

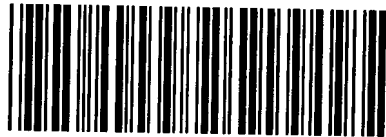
Borrowing SOLINE,Prefer delivery via ARIEL

Notes:

Fax: 910-962-3863

ILL: 3687089	:Borrower: NXW	:ReqDate: 20030210	:NeedBefore: 20030312
:Status: IN PROCESS 20030210		:RecDate:	:RenewalReq:
:OCLC: 1800316	:Source: OCLCILL	:DueDate:	:NewDueDate:
:Lender: *NMW,NRC,NDK,NDK,NOH			
:CALLNO: *Lender's OCLC LDR: 40-73 1974-1990	:TITLE: Journal of		
neurosurgery.	:IMPRINT: Park Ridge, Ill. [etc.] American Association of		
Neurological Surgeons [etc.]	:ARTICLE: J. E. Bogen: Modification of		
Aneurysm	:VOL: 41 :NO: :DATE: 1974 :PAGES:		
519	:VERIFIED: <TN:31404>OCLC ISSN: 0022-3085 [Format: Serial]		
:PATRON: Emeigh, Lauren: Undergraduate, Psychology PO Box 24991, UNCW			
Station	:SHIP TO: Interlibrary Borrowing/Randall Library/Univ. of N.C. at		
Wilmington/601 S. College Rd./Wilmington, NC 28403-5616	:BILL TO: same, FEIN		
56-125-8660	:SHIP VIA: ARIEL=152.20.25.122 or Best Method	:MAXCOST: \$25 IFM	
:COPYRT COMPLIANCE: CCL	:FAX: 910-962-3863	:E-MAIL: INTERNET:	
libraryill@uncwil.edu, ARIEL=152.20.25.122	:BORROWING NOTES: SOLINE,Prefer		
delivery via ARIEL	:LENDING CHARGES:	:SHIPPED:	:SHIP
INSURANCE:	:LENDING RESTRICTIONS:	:LENDING NOTES:	:RETURN TO:
:RETURN VIA:			

ShipVia: ARIEL=152.20.



NeedBy:
3/12/03

Return To:

ILL DEPT - HUNTER LIBRARY
WESTERN CAROLINA UNIVERSITY
176 CENTRAL DRIVE
CULLOWHEE NC 28723

ILL: 3687089 Borrower: NXW
Req Date: 2/10/03 OCLC #: 1800316
Patron: Emeigh, Lauren: Undergraduate, Psychol
Author:
Title: Journal of neurosurgery.
Article: J. E. Bogen: Modification of Aneurysm

Ship To:

Interlibrary Borrowing
Randall Library
Univ. of N.C. at Wilmington
601 S. College Rd.
Wilmington, NC 28403-5616

Vol.: 41 No.:
Date: 1974 Pages: 519
Verified: <TN:31404>OCLC ISSN: 0022-3085 [Form
Maxcost: \$25 IFM Due Date:

Lending Notes:

Bor Notes: SOLINE,Prefer delivery via ARIEL

Neurosurgical forum

dimensionally consistent. The proper Newtonian definition of force is the first derivative of momentum with respect to time:

$$F = \dot{p}/\dot{t}, (mv).$$

This reduces to the familiar:

$$F = ma$$

of classical mechanics, and cannot be related to an energy measurement by simple division by an area factor. Force can only be converted to an energy unit by integration across the distance it is acting:

$$W = \int Fdx.$$

Concerning the mechanics of cord injury in general the use of changes in momentum as well as changes in energy to describe the impact would be extremely useful. A proper biomechanical description of the collision should include the measure of impulse, or momentum transfer:

$$I = \int F dt,$$

as well as the velocity, deceleration, mass, contour, and surface area of the striker. There is ample evidence that these factors are significant in mechanical injury both to the brain and to the isolated axon. Surely a spinal cord injury preparation would lie between these in complexity, and the impact should, therefore, be described with similar precision.

S. SHATSKY, MAJ, MC, USA

A. MARTINS, LTC, MC, USA

Bethesda, Maryland

RESPONSE: Drs. Shatsky and Martins are, of course, accurate in their correction of the definition of force. The line should have read: "Energy is defined as force exerted per unit area" instead of "Force is defined as energy exerted per unit area," as printed.

The point they made regarding a more precise description of injury mechanics is well taken. Clearly, a uniform standardization of injury methodology must precede any attempt at interlaboratory data comparison. Mass, contour, and surface area of the striker as well as the height from which it is dropped

should be stated in describing the injury. However, in the equation for impulse:

$$I = F \cdot dt$$

the force under consideration is the force the cord must exert in decelerating the striker and would be a function of the cord's compressibility. Compressibility is theoretically variable, *i.e.*, such as may occur with changes in blood pressure, etc., and any method for its definition quantitation would of necessity be injurious to the cord substance. Thus, impulse seems not to be a practical measure of injury because of the nature of the biological materials under study.

From our viewpoint, the individual statement of mass, height of drop, impactor contour, as well as units expressed in gram centimeters per impacted cord area would be acceptable for communication of the injury system, providing of course, the experimenters can assure us about the squareness (impactor to cord surface fit) and accuracy of the drop (< 1 mm tolerance).

JEWELL L. OSTERHOLM, M.D.

RICHARD S. MOBERG, B.S.E.E.

Philadelphia, Pennsylvania

Modification of Aneurysm Clip Applier

TO THE EDITOR: The aneurysm clips introduced by Heifetz have advantages, but in our hands the applier accompanying them has proved disappointing, particularly when it is necessary to remove or adjust the position of a previously applied clip. A happy solution has been found by using a modification of the Smith clip applier, which has a smooth, positive action, and whose grasping tips fit securely over the control lips of the Heifetz clip. The grasping tips of the three available Smith appliers (Codman) are grossly oversized but can easily be reduced by taking off the excess metal with a small grinding wheel, leaving the grasping surface intact. We have been using this modification successfully since 1971.

JOSEPH E. BOGEN, M.D.

Ross-Loos Medical Group

Los Angeles, California