DESCRIPTION

NeuroToxicology specializes in publishing peer-reviewed original research papers describing the effects of toxic substances on the nervous system across the lifespan as determined in humans and/or experimental models (in vivo, in vitro, in silico). The Journal welcomes papers dealing with the neurotoxic effects of occupationally and environmentally relevant exposures to agents (chemical, physical, biological, pharmacological or naturally occurring), singly or in mixtures, including complex mixtures, such as air pollution. Papers describing neurotoxic outcomes associated with natural disasters, industrial accidents, and terrorist attacks are also welcome.

Experimental (animal, in vitro, in silico) papers focused on the neurotoxic effects of undefined commercial formulas (i.e., pesticide formulations) will be considered only if the authors report the chemical composition of the formulation and/or determine whether neurotoxic effects are due to the active chemical ingredient(s), carrier, or combination. For human studies, the components of formulations or other mixtures should be identified, but if not available, the source of exposure (i.e. commercial formulation, air pollution, wildfires, hurricanes, and other natural or industrial disasters) should be described as fully as possible.

NeuroToxicology welcomes papers describing interventions for mitigating or reversing neurotoxic outcomes, but will accept papers reporting on neuroprotective or neurorestorative properties of formulations, botanical extracts, or other natural products only if full chemical identification and purification information of the active molecule(s) is provided. NeuroToxicology does not accept case reports.

Benefits to authors
We also provide many author benefits, such as free PDFs, a liberal copyright policy, special discounts on Elsevier publications and much more. Please click here for more information on our author services.

Please see our Guide for Authors for information on article submission. If you require any further information or help, please visit our Support Center

IMPACT FACTOR

2020: 4.294 © Clarivate Analytics Journal Citation Reports 2021
ABSTRACTING AND INDEXING

Chemical Abstracts
Current Contents
PubMed/Medline
Biology Digest
BIOSIS Citation Index
Science Citation Index
PubMed/Medline
Embase
Archives of Environmental Health
All-Union Institute of Scientific and Technical Information of the USSR
Medical Abstracts Service
Japanese Citation Index
Embase
EMBiology

EDITORIAL BOARD

EDITORS-IN-CHIEF
Pamela J. Lein, University of California Davis Department of Molecular Biosciences, VM3B 2009 1089 Veterinary Medicine Drive, CA 95616, Davis, California, United States of America, Fax: +1 530 752 4698
air pollution, chemical-induced seizures, developmental neurotoxicity, neurodegeneration, neuroinflammation, neurotoxicology, organophosphates, persistent organic pollutants
Remco Westerink, Utrecht University Institute for Risk Assessment Sciences, P.O. Box 80177, 3508 TD, Utrecht, Netherlands, Fax: +31 (0)30-253 5077
In vitro neurotoxicology, in vitro methods, in vitro models, pesticides and persistent organic pollutants, in vitro developmental neurotoxicity, psychoactive substances

EDITOR-IN-CHIEF EMERITUS / FOUNDING EDITOR
Joan Marie Cranmer, PhD, ATS - Editor-in-Chief 1979-2017, University of Arkansas for Medical Sciences, Little Rock, Arkansas, USA

REVIEWS EDITOR
Stephen M. Lasley, University of Illinois Chicago College of Medicine at Peoria Department of Cancer Biology and Pharmacology, Peoria, Illinois, United States of America
Neurotoxicology, Lead as a neurotoxin, Epilepsy, Developmental neurotoxicity, Uranium, manganese, and methylmercury neurotoxicity, Neurotoxicant effects on models of synaptic plasticity- LTP, LTD

LETTERS EDITOR
John L. O'Donoghue, , New York, United States of America
Comparative neuropathology, Solvent-induced neurotoxicity, Forensic toxicology and pathology, Neurotoxicity and neuropathology of metals

ASSOCIATE EDITORS
Michael Aschner, Albert Einstein College of Medicine, Department of Molecular Pharmacology, Bronx, New York, United States of America
Mercury, Manganese, Astrocytes, Metallothionein, Metal Transporters, Dopamine, C. elegans
Aaron B. Bowman, Purdue University School of Health Sciences, West Lafayette, Indiana, United States of America
Metals, Neurogenetics, Human stem cells, Neurodegeneration, Mouse models of neurotoxicity
Jason R. Cannon, Purdue University School of Health Sciences, West Lafayette, Indiana, United States of America
Heterocyclic amines; pesticides; neurodegenerative diseases; neurobehavior; neuropathology; neurotransmission
Chun-Jung Chen, Taichung Veterans General Hospital Department of Medical Research, Taichung, Taiwan
Neuroinflammation, Microglia, Metals, Virus, Stroke
Deborah A. Cory-Slechta, University of Rochester Medical Center Department of Environmental Medicine, Rochester, New York, United States of America
Metals, Air pollution, pesticides, behavior, cognition, epigenetics
Lucio G. Costa, University of Washington Department of Environmental and Occupational Health Sciences, Seattle, Washington, United States of America
Pesticides, neurochemistry, air pollution, PBDEs, cell culture, developmental neurotoxicity

Christine Curran, Northern Kentucky University, Highland Heights, Kentucky, United States of America
Developmental neurotoxicology, benzo[a]pyrene, polychlorinated biphenyls, energy drinks, aryl hydrocarbon receptor, CYP1A1, CYP1A2, neurobehavior, mouse models, gene-environment interactions

Jonathan A. Doorn, The University of Iowa Division of Medicinal and Natural Products Chemistry, Iowa City, Iowa, United States of America
Drug abuse, Lipid peroxidation, Mechanism of toxicity, Metabolism, Neurotoxicity, Organophosphates, Oxidative damage, Oxidative stress, Pesticides, Proteomics, Toxicology - general

Pam Factor-Litvak, Columbia University Mailman School of Public Health, New York, New York, United States of America
Child development, epidemiology, birth cohorts, organochlorines, phthalates, pesticides

Nick Filipov, University of Georgia Department of Physiology and Pharmacology, Athens, Georgia, United States of America
Pesticides, Metals, Neuroinflammation, Neurochemistry, Behavioral toxicity, in vitro

Rodrigo Franco Cruz, University of Nebraska-Lincoln School of Veterinary Medicine and Biomedical Sciences, Lincoln, Nebraska, United States of America
Autophagy, Apoptosis, Redox, Oxidative stress, Proteostasis, Metabolism, Signal Transduction, Neurodegeneration, Astrocytes

Mary E. Gilbert, National Health and Environmental Effects Research Laboratory Division of Toxicity Assessment Division, Research Triangle Park, North Carolina, United States of America
Hypothyroidism, hippocampus, synaptic physiology, learning and memory, endocrine disruption, neurobehavior, neurodevelopment

G. Jean Harry, National Institute of Environmental Health Sciences, Research Triangle Park, North Carolina, United States of America
Neuroinflammation, glia biology, imaging, mRNA, metals, developmental neurotoxicity

Harm Heusinkveld, National Institute for Public Health and the Environment, Bilthoven, Netherlands
Air pollution, Nanomaterials, Pesticides, Novel in vitro techniques, In vivo neurobehavior, Neurotoxicity of inhalable compounds

Fang Liu, National Center for Toxicological Research, Jefferson, Arkansas, United States of America
Developmental neurotoxicology; Neuro-protection; Neural stem cells.

Jordi Llorens, University of Barcelona Faculty of Medicine and Health Sciences, Barcelona, Spain
Nitriles, Natural neurotoxic compounds in food plants, Ototoxicity, Sensory systems toxicity, In vivo, behavioral assessment, Histological assessment (electron and confocal microscopies)

Roberto Lucchini, Florida International University Robert Stempel College of Public Health and Social Work, Miami, Florida, United States of America
Metals, Manganese, Lead, Cognitive impairment, Parkinsonism, Neurobehavioral testing

Jaime M. Merino, University of Extremadura Department of Biochemistry and Molecular Biology and Genetics, Badajoz, Spain
Dioxin; N-methyl-D-aspartate; TCDD; glutamate; excitotoxicity; aryl hydrocarbon receptor

Carey Nat Pope, Oklahoma State University College of Veterinary Medicine, Stillwater, Oklahoma, United States of America
Organophosphates, Peripheral nerve degeneration, Receptor function, General neurotoxicology

Jason R. Richardson, Florida International University Robert Stempel College of Public Health and Social Work, Miami, Florida, United States of America
Pesticides, Neurodegeneration, Neuroinflammation, Neuroprotection

João Batista T. da Rocha, Federal University of Santa Maria Department of Biochemistry and Cell Biology, Santa Maria, RS, Brazil
Developmental neurotoxicology, methylmercury, selenium, soft electrophilic neurotoxicants, selenol, thiol, selenoproteins, neuroprotection

Veronica M. Rodriguez, National Autonomous University of Mexico Department of Cellular and Molecular Neurobiology, Juriquilla, Mexico
Arsenic, herbicides, HPLC, dopaminergic system, microdialysis, behavior.

Timothy J. Shafer, Environmental Protection Agency Division of Integrated Systems Toxicology, Research Triangle Park, North Carolina, United States of America
Electrophysiology, Calcium and second messenger signalling, Organic solvents, Pesticides, Neurotoxicity risk assessment

Kennie Raviie Shepherd, Morehouse School of Medicine Department of Pharmacology and Toxicology, Atlanta, Georgia, United States of America
Pesticide toxicity, Heavy metals toxicity, Drugs of abuse toxicity, Oxidative stress, Neurochemistry, Parkinson’s disease (neurodegenerative disease)

William Slikker Jr., National Center for Toxological Research, Jefferson, Arkansas, United States of America
Developmental neurotoxicity, placental transfer, neuroimaging, microphysiological systems, #pharmacokinetics/modeling, anesthetics, safety assessment
Christoph Van Thriel, TU Dortmund University, Dortmund, Germany
Electrophysiology/ Neuroimaging (in vitro and in vivo), Risk Assessment, Neurobehavioral Toxicology, Epidemiology, Solvent Neurotoxicity, Metal Neurotoxicity, translational Neurotoxicology

Yukun Yuan, Michigan State University Department of Pharmacology and Toxicology, East Lansing, Michigan, United States of America
Electrophysiology, Ion Channel, Synaptic function, channelopathies, epilepsy, methylmercury.

Sergio Zarazúa, Autonomous University of San Luis Potosí faculty of Chemical Sciences, San Luis Potosí, Mexico
Alzheimer’s disease, Animal models, Drugs of abuse, Heavy metals, Oxidative stress

EDITORIAL BOARD

Syed Ali, Johns Hopkins Medicine, Baltimore, Maryland, United States of America
Antioxidants as neuroprotective agents, Blood-brain-barrier models, Neurodegeneration, Oxidative stress, Toxico logical screening, Traumatic brain injury

Maria Rosa Avila-Costa, National Autonomous University of Mexico Department of Cognitive Neuroscience, Mexico City, Mexico
Autophagy, Manganese, Metals toxicology, Neurodegenerative disease

Anna Bencsik, Asses Laboratoire de Lyon, Lyon, France
Animal models, Enteric nervous system, Nanomaterials, Neurodegenerative diseases, Neurovirology, Parkinson’s disease, Pesticides, Prion diseases

Alison Bernstein, Michigan State University College of Human Medicine, Saginaw, Michigan, United States of America
Developmental neurotoxicology, Epigenetics, Neurodegeneration, Parkinson’s disease, Pesticides

William K. Boyes, US Environmental Protection Agency, Research Triangle Park, North Carolina, United States of America
Neurophysiology, Visual system, Hydrocarbons, Nanomaterials

Wayne Briner, Bad Wolf Labs, Wayne, Nebraska, United States of America
Behavioral toxicology, Clinical neurotoxicology, Developmental neurotoxicity, Metals, Statistical analyses, Uranium

Zhengyu Cao, China Pharmaceutical University School of Traditional Chinese Pharmacy, Nanjing, China
Calcium signaling, Electrophysiology, High-throughput screening, Ion channels, Peptidic toxins, Pyrethrroids

William M Caudle, Emory University School of Public Health, Atlanta, Georgia, United States of America
Animal Models, Neurodegeneration, Neurotransmission, Persistent Organic Pollutants, Pesticides, Synapse

Honglei Chen, Michigan State University Department of Epidemiology and Biostatistics, East Lansing, Michigan, United States of America
Air pollution, Neurodegenerative diseases, Olfactory impairment, Pesticides, Prodromal symptomology

Susan Criswell, Washington University in St Louis Department of Neurology, Saint Louis, Missouri, United States of America
Manganese, Movement Disorders, Parkinsonism, Dystonia, MRI, PET

Jamie DeWitt, East Carolina University Brody School of Medicine, Greenville, North Carolina, United States of America
Alzheimer’s disease, Autism spectrum disorder, Developmental neurotoxicity, Neuroimmunotoxicity, Per- and polyfluoroalkyl substances (PFASs), Persistent organic pollutants (POPs)

Marion Ehrich, Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg, Virginia, United States of America
General toxicology, General pharmacology, Neurotoxic esterase, Organophosphate toxicity, Organophosphate-induced delayed neuropathy

Keith M. Erikson, UNC Greensboro Department of Nutrition, Greensboro, North Carolina, United States of America
Antioxidants, Behavior, Metal toxicity, Neurochemistry, Neurodevelopment, Trace elements

Paul Eubig, University of Georgia College of Veterinary Medicine, Athens, Georgia, United States of America
Operant behavior, attention, impulsivity, PCBs, flame retardants, pesticides

Qiang Gu, National Center for Toxicological Research, Jefferson, Arkansas, United States of America
Neurodegeneration, neurological disorders, developmental neurotoxicity, in vivo and in vitro models, proteomics

Joshua A. Harrill, United States Environmental Protection Agency, National Center for Computational Toxicology, Research Triangle Park, North Carolina, United States of America
High content imaging, Transcriptomics, Neurotoxicology, Next generation risk assessment

Helena Hogberg, Johns Hopkins University Department of Environmental Health and Engineering, Baltimore, Maryland, United States of America
Developmental Neurotoxicity (DNT), 3D in vitro models, metabolomics, 3Rs, human-on-chip approaches, electrical activity recording.
David A. Jett, National Institute of Neurological Disorders and Stroke, Bethesda, Maryland, United States of America
Pesticides, chemical warfare agents, translational research, antidotes, cholinergic system

Jyotshna Kanungo, United States Food and Drug Administration, National Center for Toxicological Research, Jefferson, Arkansas, United States of America
Cell signaling, Perfluorinated chemicals, Neuronal cell cultures, Oxidative stress, Polybrominated diphenyl ethers, Polychlorinated biphenyls

Prasada Rao S. Kodavanti, National Health and Environmental Effects Research Laboratory Division of Toxicity Assessment Division, Research Triangle Park, North Carolina, United States of America

Christopher A. McPherson, National Institute of Environmental Health Sciences, Research Triangle Park, North Carolina, United States of America
Glial cells, In vivo models, In vitro models, Neurodegeneration, Neurodevelopment, Neuroinflammation

Jyotshna Kanungo, United States Food and Drug Administration, National Center for Toxicological Research, Jefferson, Arkansas, United States of America
Cell signaling, Perfluorinated chemicals, Neuronal cell cultures, Oxidative stress, Polybrominated diphenyl ethers, Polychlorinated biphenyls

Prasada Rao S. Kodavanti, National Health and Environmental Effects Research Laboratory Division of Toxicity Assessment Division, Research Triangle Park, North Carolina, United States of America

Christopher A. McPherson, National Institute of Environmental Health Sciences, Research Triangle Park, North Carolina, United States of America
Glial cells, In vivo models, In vitro models, Neurodegeneration, Neurodevelopment, Neuroinflammation

Briana de Miranda, The University of Alabama at Birmingham Department of Neurobiology, Birmingham, Alabama, United States of America
Gene-environment interactions, Gene therapy, Mitochondrial toxicity, Organic solvents, Parkinson’s disease, Pesticides

Angelo Moretto, University of Padua Department of Cardiac Thoracic and Vascular Science and Public Health, Padova, Italy
Peripheral nervous system, risk assessment, pesticides, organophosphates, carbamates, occupational health

Somshuvara Mukhopadhyay, The University of Texas at Austin Department of Pharmacology and Toxicology, Austin, Texas, United States of America
Metal transport, Homeostasis, Neurotoxicity, Transporters, Manganese, Genetic mouse models

M. Christopher Newland, Auburn University at Montgomery Department of Psychology, Auburn, Alabama, United States of America
Aging, Animal Models, Behavioral toxicology, Developmental neurotoxicology, Metals, Methylmercury

Richard Ortega, Centre for Nuclear Studies Bordeaux Gradignan, Gradignan, France
Parkinson’s disease, Amyotrophic lateral sclerosis, Metal neurotoxicology and chemical speciation, Synchrotron imaging

Jessica S. Plavicki, Brown University Department of Pathology and Laboratory Medicine, Providence, Rhode Island, United States of America
Advanced imaging modalities, Calcium imaging, Dioxin, Neurodevelopment, Molecular toxicology, Persistent organic pollutants, Vascular development, Zebrafish

Diane S. Rohlman, The University of Iowa College of Public Health, Iowa City, Iowa, United States of America
Pesticides, Neurodevelopment, Occupational exposures, Environmental exposures, Neurobehavioral

Jill Silverman, University of California Davis School of Medicine, Sacramento, California, United States of America
Behavior (cognitive, learning and memory, social, memory), Brain development, EEG, Genetics, Mouse and rat models, Neurodevelopmental disorders

Neeraj Singh, Cleveland Clinic Department of Neurosciences, Cleveland, Ohio, United States of America
Neurodegenerative diseases, Immunology/Immunotoxicology, Neuroinflammation, Pesticides/Heavy Metal Toxicity, Nanomedicine, Ethnopharmacology

Jay Sirois, Consumer Healthcare Products Association, Washington, District of Columbia, United States of America
Developmental neurotoxicity, Environmental toxicology, Methylmercury, Over-the-counter drugs, Risk assessment

Christina A. Sobin, The University of Texas at El Paso College of Health Sciences, El Paso, Texas, United States of America
Animal models, Arsenic, Developmental neurotoxicity, Lead, Human studies, Stress

Marissa Sobolewski, University of Rochester School of Medicine and Dentistry, Rochester, New York, United States of America
Air pollution, Behavior toxicology, Developmental neurotoxicity, Endocrine disruption, Epigenetics, Metals, Neurodevelopmental disorders, Sex differences

Tamara Tal, Helmholtz Centre for Environmental Research Department Bioanalytical Ecotoxicology, Leipzig, Germany
Adverse Outcome Pathway (AOP) delineation, Gene editing, Microbiome, Molecular toxicology, Neurobehavior, Zebrafish

Christopher Thompson, Virginia Technical University, School of Neuroscience, Blacksburg, Virginia, United States of America
Endocrine disruption, Neurodevelopment, Neurogenesis, Heavy metal toxicity, Mitochondrial toxicity, Xenopus, zebrafish, Avian neurobiology

Charles V. Vorhees, Cincinnati Children’s Hospital Medical Center, Cincinnati, Ohio, United States of America
Behavior (cognitive, learning and memory, social, memory), Brain development, EEG, Genetics, Mouse and rat models, Neurodevelopmental disorders

AUTHOR INFORMATION PACK 15 Jun 2022 www.elsevier.com/locate/neuro
Developmental neurotoxicity, amphetamines, pyrethroids, manganese, cognitive assessment, behavioral phenotyping, Editorial Boards: Neurotoxicology, Brain, Neurotoxicology & Teratology, Editorial Board: Brain, Behavior & Immunity

David R. Wallace, Oklahoma State University, Stillwater, Oklahoma, United States of America
Apoptotic pathways, Energy utilization, Environmental toxicology, Heavy metals, Mitochondrial toxicity, Mixtures, Neurodegeneration, Neurodevelopment, Oxidative stress, Pesticides

Edwin van Wijngaarden, University of Rochester Medical Center Department of Public Health Sciences, Rochester, New York, United States of America
Occupational epidemiology; environmental epidemiology; neurodevelopmental outcomes; metals; pesticides
GUIDE FOR AUTHORS

Your Paper Your Way
We now differentiate between the requirements for new and revised submissions. You may choose to submit your manuscript as a single Word or PDF file to be used in the refereeing process. Only when your paper is at the revision stage, will you be requested to put your paper in to a 'correct format' for acceptance and provide the items required for the publication of your article.
To find out more, please visit the Preparation section below.

INTRODUCTION

NeuroToxicology specializes in publishing peer-reviewed original research papers describing the effects of toxic substances on the nervous system across the lifespan as determined in humans and/or experimental models (in vivo, in vitro, in silico). The Journal welcomes papers dealing with the neurotoxic effects of occupationally and environmentally relevant exposures to agents (chemical, physical, biological, pharmacological or naturally occurring), singly or in mixtures, including complex mixtures, such as air pollution. Papers describing neurotoxic outcomes associated with natural disasters, industrial accidents, and terrorist attacks are also welcome.

Experimental (animal, in vitro, in silico) papers focused on the neurotoxic effects of undefined commercial formulas (i.e., pesticide formulations) will be considered only if the authors report the chemical composition of the formulation and/or determine whether neurotoxic effects are due to the active chemical ingredient(s), carrier, or combination. For human studies, the components of formulations or other mixtures should be identified, but if not available, the source of exposure (i.e. commercial formulation, air pollution, wildfires, hurricanes, and other natural or industrial disasters) should be described as fully as possible.

NeuroToxicology welcomes papers describing interventions for mitigating or reversing neurotoxic outcomes, but will accept papers reporting on neuroprotective or neurorestorative properties of formulations, botanical extracts, or other natural products only if full chemical identification and purification information of the active molecule(s) is provided. NeuroToxicology does not accept case reports.

Types of papers

NeuroToxicology will publish papers containing Original Research, Brief Communications, Reviews, Letters to the Editor, Forum "Position Papers," Commentaries and Features. Neurotoxicology will not accept papers reporting on neuroactive properties of formulations or natural products for which full chemical identification and purification information is lacking

Original Research. Articles will contain laboratory or clinical scientific research pertaining to neurotoxicology. Economy of style is encouraged, although papers may be as long as short as the findings justify. Illustrations should make significant points. Excessive or repetitive illustrations will not be published.

Brief Communications. NeuroToxicology will publish brief reports of work that has progressed to the stage at which it is considered that the science of neurotoxicology would be advanced if the results were made available as soon as possible. These reports should be no longer than six pages in the present format of NeuroToxicology. Authors should submit reports of this category of publication only when they believe that the rapid world-wide communication of the results is of the utmost importance to other investigators.

Reviews. For review articles to be considered for publication, they should meet the following criteria: 1) Address a topic that is timely, of significant importance and/or novel; 2) Possess a significant depth or level of critical analysis of the literature being reviewed; 3) Provide new insight or new synthesis to an appropriately circumscribed area of literature; and 4) Identify key data gaps in the area of literature and provide suggestions for addressing those gaps.

Letters to the Editor. Letters to the Editor may be up to 500 words in length, responding to material in NeuroToxicology, introducing a new point of view, or discussing a topic of current concern. Letters will be subject to the same review process as Original Research articles and Reviews. Any letter responding to a previous publication may be submitted to the author of the original paper in order that any reply may be published simultaneously with the letter. Letters should be received within two months of mailing of the Journal.
**Forum.** The Forum section "Position Papers" of the Journal will address, discuss, and present position papers on current issues in neurotoxicology. Replies will be invited from all sectors of society; they include: chemical industries, pharmaceutical industries, governmental regulatory agencies, other governmental groups, academic institutions, as well as consumers and special interest groups. The format will be flexible. Letters responding to a position paper in the Forum section will be submitted to the author of the position paper in order that any reply may be published simultaneously with the Letter. Letters should be received within two months of mailing of the Journal.

**Submission checklist**

You can use this list to carry out a final check of your submission before you send it to the journal for review. Please check the relevant section in this Guide for Authors for more details.

**Ensure that the following items are present:**

One author has been designated as the corresponding author with contact details:
- E-mail address
- Full postal address

All necessary files have been uploaded:

**Manuscript:**
- Include keywords
- All figures (include relevant captions)
- All tables (including titles, description, footnotes)
- Ensure all figure and table citations in the text match the files provided
- Indicate clearly if color should be used for any figures in print

**Graphical Abstracts / Highlights files** (where applicable)

**Supplemental files** (where applicable)

Further considerations
- Manuscript has been 'spell checked' and 'grammar checked'
- All references mentioned in the Reference List are cited in the text, and vice versa
- Permission has been obtained for use of copyrighted material from other sources (including the Internet)
- A competing interests statement is provided, even if the authors have no competing interests to declare
- Journal policies detailed in this guide have been reviewed
- Referee suggestions and contact details provided, based on journal requirements

For further information, visit our Support Center.

**BEFORE YOU BEGIN**

**Ethics in publishing**

Please see our information on Ethics in publishing.

**Studies in humans and animals**

If the work involves the use of human subjects, the author should ensure that the work described has been carried out in accordance with The Code of Ethics of the World Medical Association (Declaration of Helsinki) for experiments involving humans. The manuscript should be in line with the Recommendations for the Conduct, Reporting, Editing and Publication of Scholarly Work in Medical Journals and aim for the inclusion of representative human populations (sex, age and ethnicity) as per those recommendations. The terms sex and gender should be used correctly.

Authors should include a statement in the manuscript that informed consent was obtained for experimentation with human subjects. The privacy rights of human subjects must always be observed.

All animal experiments should comply with the ARRIVE guidelines and should be carried out in accordance with the U.K. Animals (Scientific Procedures) Act, 1986 and associated guidelines, EU Directive 2010/63/EU for animal experiments, or the National Research Council's Guide for the Care
and Use of Laboratory Animals and the authors should clearly indicate in the manuscript that such guidelines have been followed. The sex of animals must be indicated, and where appropriate, the influence (or association) of sex on the results of the study.

Declaration of competing interest
All authors must disclose any financial and personal relationships with other people or organizations that could inappropriately influence (bias) their work. Examples of potential conflicts of interest include employment, consultancies, stock ownership, honoraria, paid expert testimony, patent applications/registrations, and grants or other funding. Authors should complete the declaration of competing interest statement using this template and upload to the submission system at the Attach/Upload Files step. **Note: Please do not convert the .docx template to another file type. Author signatures are not required.** If there are no interests to declare, please choose the first option in the template. More information.

Author Agreement
Please use the following text for author agreement and upload the file during article submission:

We the undersigned declare that this manuscript is original, has not been published before and is not currently being considered for publication elsewhere.

We confirm that the manuscript has been read and approved by all named authors and that there are no other persons who satisfied the criteria for authorship but are not listed.

We further confirm that the order of authors listed in the manuscript has been approved by all of us. We understand that the Corresponding Author is the sole contact for the Editorial process. He/she is responsible for communicating with the other authors about progress, submissions of revisions and final approval of proofs.

Signed by all authors as follows:

Submission declaration and verification
Submission of an article implies that the work described has not been published previously (except in the form of an abstract, a published lecture or academic thesis, see 'Multiple, redundant or concurrent publication' for more information), that it is not under consideration for publication elsewhere, that its publication is approved by all authors and tacitly or explicitly by the responsible authorities where the work was carried out, and that, if accepted, it will not be published elsewhere in the same form, in English or in any other language, including electronically without the written consent of the copyright-holder. To verify originality, your article may be checked by the originality detection service Crossref Similarity Check.

Preprints
Please note that preprints can be shared anywhere at any time, in line with Elsevier's sharing policy. Sharing your preprints e.g. on a preprint server will not count as prior publication (see 'Multiple, redundant or concurrent publication' for more information).

Use of inclusive language
Inclusive language acknowledges diversity, conveys respect to all people, is sensitive to differences, and promotes equal opportunities. Content should make no assumptions about the beliefs or commitments of any reader; contain nothing which might imply that one individual is superior to another on the grounds of age, gender, race, ethnicity, culture, sexual orientation, disability or health condition; and use inclusive language throughout. Authors should ensure that writing is free from bias, stereotypes, slang, reference to dominant culture and/or cultural assumptions. We advise to seek gender neutrality by using plural nouns ("clinicians, patients/clients") as default/wherever possible to avoid using "he, she," or "he/she." We recommend avoiding the use of descriptors that refer to personal attributes such as age, gender, race, ethnicity, culture, sexual orientation, disability or health condition unless they are relevant and valid. When coding terminology is used, we recommend to avoid offensive or exclusionary terms such as "master", "slave", "blacklist" and "whitelist". We suggest using alternatives that are more appropriate and (self-) explanatory such as "primary", "secondary", "blocklist" and "allowlist". These guidelines are meant as a point of reference to help identify appropriate language but are by no means exhaustive or definitive.

Author contributions
For transparency, we encourage authors to submit an author statement file outlining their individual contributions to the paper using the relevant CRediT roles: Conceptualization; Data curation; Formal analysis; Funding acquisition; Investigation; Methodology; Project administration; Resources;
Software; Supervision; Validation; Visualization; Roles/Writing - original draft; Writing - review & editing. Authorship statements should be formatted with the names of authors first and CRediT role(s) following. More details and an example.

**Changes to authorship**
Authors are expected to consider carefully the list and order of authors before submitting their manuscript and provide the definitive list of authors at the time of the original submission. Any addition, deletion or rearrangement of author names in the authorship list should be made only before the manuscript has been accepted and only if approved by the journal Editor. To request such a change, the Editor must receive the following from the corresponding author: (a) the reason for the change in author list and (b) written confirmation (e-mail, letter) from all authors that they agree with the addition, removal or rearrangement. In the case of addition or removal of authors, this includes confirmation from the author being added or removed.

Only in exceptional circumstances will the Editor consider the addition, deletion or rearrangement of authors after the manuscript has been accepted. While the Editor considers the request, publication of the manuscript will be suspended. If the manuscript has already been published in an online issue, any requests approved by the Editor will result in a corrigendum.

**Article transfer service**
This journal is part of our Article Transfer Service. This means that if the Editor feels your article is more suitable in one of our other participating journals, then you may be asked to consider transferring the article to one of those. If you agree, your article will be transferred automatically on your behalf with no need to reformat. Please note that your article will be reviewed again by the new journal. More information.

**Copyright**
Upon acceptance of an article, authors will be asked to complete a 'Journal Publishing Agreement' (see more information on this). An e-mail will be sent to the corresponding author confirming receipt of the manuscript together with a 'Journal Publishing Agreement' form or a link to the online version of this agreement.

Subscribers may reproduce tables of contents or prepare lists of articles including abstracts for internal circulation within their institutions. Permission of the Publisher is required for resale or distribution outside the institution and for all other derivative works, including compilations and translations. If excerpts from other copyrighted works are included, the author(s) must obtain written permission from the copyright owners and credit the source(s) in the article. Elsevier has preprinted forms for use by authors in these cases.

For gold open access articles: Upon acceptance of an article, authors will be asked to complete a 'License Agreement' (more information). Permitted third party reuse of gold open access articles is determined by the author's choice of user license.

**Author rights**
As an author you (or your employer or institution) have certain rights to reuse your work. More information.

Elsevier supports responsible sharing
Find out how you can share your research published in Elsevier journals.

**Role of the funding source**
You are requested to identify who provided financial support for the conduct of the research and/or preparation of the article and to briefly describe the role of the sponsor(s), if any, in study design; in the collection, analysis and interpretation of data; in the writing of the report; and in the decision to submit the article for publication. If the funding source(s) had no such involvement, it is recommended to state this.

**Open access**
Please visit our Open Access page for more information.
Elsevier Researcher Academy

Researcher Academy is a free e-learning platform designed to support early and mid-career researchers throughout their research journey. The "Learn" environment at Researcher Academy offers several interactive modules, webinars, downloadable guides and resources to guide you through the process of writing for research and going through peer review. Feel free to use these free resources to improve your submission and navigate the publication process with ease.

Language (usage and editing services)
Please write your text in good English (American or British usage is accepted, but not a mixture of these). Authors who feel their English language manuscript may require editing to eliminate possible grammatical or spelling errors and to conform to correct scientific English may wish to use the English Language Editing service available from Elsevier's Author Services.

Submission
Our online submission system guides you stepwise through the process of entering your article details and uploading your files. The system converts your article files to a single PDF file used in the peer-review process. Editable files (e.g., Word, LaTeX) are required to typeset your article for final publication. All correspondence, including notification of the Editor's decision and requests for revision, is sent by e-mail.

Experimental procedures
All animal experiments should be carried out in accordance with the U.K. Animals (Scientific Procedures) Act, 1986 and associated guidelines, the European Communities Council Directive of 24 November 1986 (86/609/EEC) or the National Institutes of Health guide for the care and use of Laboratory animals (NIH Publications No. 8023, revised 1978) and the authors should clearly indicate in the manuscript that such guidelines have been followed. All animal studies need to ensure they comply with the ARRIVE guidelines. More information can be found at http://www.nc3rs.org.uk/page.asp?id=1357.

PREPARATION

Queries
For questions about the editorial process (including the status of manuscripts under review) or for technical support on submissions, please visit our Support Center.

NEW SUBMISSIONS
Submission to this journal proceeds totally online and you will be guided stepwise through the creation and uploading of your files. The system automatically converts your files to a single PDF file, which is used in the peer-review process.
As part of the Your Paper Your Way service, you may choose to submit your manuscript as a single file to be used in the refereeing process. This can be a PDF file or a Word document, in any format or layout that can be used by referees to evaluate your manuscript. It should contain high enough quality figures for refereeing. If you prefer to do so, you may still provide all or some of the source files at the initial submission. Please note that individual figure files larger than 10 MB must be uploaded separately.

References
There are no strict requirements on reference formatting at submission. References can be in any style or format as long as the style is consistent. Where applicable, author(s) name(s), journal title/book title, chapter title/article title, year of publication, volume number/book chapter and the article number or pagination must be present. Use of DOI is highly encouraged. The reference style used by the journal will be applied to the accepted article by Elsevier at the proof stage. Note that missing data will be highlighted at proof stage for the author to correct.

Formatting requirements
There are no strict formatting requirements but all manuscripts must contain the essential elements needed to convey your manuscript, for example Abstract, Keywords, Introduction, Materials and Methods, Results, Conclusions, Artwork and Tables with Captions.
If your article includes any Videos and/or other Supplementary material, this should be included in your initial submission for peer review purposes.
Divide the article into clearly defined sections.
Figures and tables embedded in text
Please ensure the figures and the tables included in the single file are placed next to the relevant text in the manuscript, rather than at the bottom or the top of the file. The corresponding caption should be placed directly below the figure or table.

Peer Review
This journal operates a single anonymized review process. All contributions will be initially assessed by the editor for suitability for the journal. Papers deemed suitable are then typically sent to a minimum of two independent expert reviewers to assess the scientific quality of the paper. The Editor is responsible for the final decision regarding acceptance or rejection of articles. The Editor's decision is final. Editors are not involved in decisions about papers which they have written themselves or have been written by family members or colleagues or which relate to products or services in which the editor has an interest. Any such submission is subject to all of the journal's usual procedures, with peer review handled independently of the relevant editor and their research groups. The Editor must not be involved in decisions about papers which s/he has written him/herself or have been written by family members or colleagues or which relate to products or services in which the editor has an interest. Further, any such submission must be subject to all of the journal's usual procedures, peer review must be handled independently of the relevant author/Editor and their research groups, and there must be a clear statement to this effect on any such paper that is published. More information on types of peer review.

REVISED SUBMISSIONS
Use of word processing software
Regardless of the file format of the original submission, at revision you must provide us with an editable file of the entire article. Keep the layout of the text as simple as possible. Most formatting codes will be removed and replaced on processing the article. The electronic text should be prepared in a way very similar to that of conventional manuscripts (see also the Guide to Publishing with Elsevier). See also the section on Electronic artwork.
To avoid unnecessary errors you are strongly advised to use the 'spell-check' and 'grammar-check' functions of your word processor.

Subdivision - numbered sections
Divide your article into clearly defined and numbered sections. Subsections should be numbered 1.1 (then 1.1.1, 1.1.2, ...), 1.2, etc. (the abstract is not included in section numbering). Use this numbering also for internal cross-referencing: do not just refer to 'the text'. Any subsection may be given a brief heading. Each heading should appear on its own separate line.

Introduction
State the objectives of the work and provide an adequate background, avoiding a detailed literature survey or a summary of the results.

Material and methods
Provide sufficient details to allow the work to be reproduced by an independent researcher. Methods that are already published should be summarized, and indicated by a reference. If quoting directly from a previously published method, use quotation marks and also cite the source. Any modifications to existing methods should also be described.

Results
Results should be clear and concise.

Discussion
This should explore the significance of the results of the work, not repeat them. A combined Results and Discussion section is often appropriate. Avoid extensive citations and discussion of published literature.

Conclusions
The main conclusions of the study may be presented in a short Conclusions section, which may stand alone or form a subsection of a Discussion or Results and Discussion section.

Essential title page information
- **Title.** Concise and informative. Titles are often used in information-retrieval systems. Avoid abbreviations and formulae where possible.
- **Author names and affiliations.** Please clearly indicate the given name(s) and family name(s) of each author and check that all names are accurately spelled. You can add your name between parentheses in your own script behind the English transliteration. Present the authors' affiliation
addresses (where the actual work was done) below the names. Indicate all affiliations with a lower-
case superscript letter immediately after the author's name and in front of the appropriate address.
Provide the full postal address of each affiliation, including the country name and, if available, the
e-mail address of each author.
• **Corresponding author.** Clearly indicate who will handle correspondence at all stages of refereeing
and publication, also post-publication. This responsibility includes answering any future queries about
Methodology and Materials. **Ensure that the e-mail address is given and that contact details are kept up to date by the corresponding author.**
• **Present/permanent address.** If an author has moved since the work described in the article was
done, or was visiting at the time, a 'Present address' (or 'Permanent address') may be indicated as
a footnote to that author's name. The address at which the author actually did the work must be
retained as the main, affiliation address. Superscript Arabic numerals are used for such footnotes.

**Highlights**

Highlights are mandatory for this journal as they help increase the discoverability of your article via
search engines. They consist of a short collection of bullet points that capture the novel results of
your research as well as new methods that were used during the study (if any). Please have a look
at the examples here: example Highlights.

Highlights should be submitted in a separate editable file in the online submission system. Please
use 'Highlights' in the file name and include 3 to 5 bullet points (maximum 85 characters, including
spaces, per bullet point).

**Abstract**

A concise and factual abstract is required. The abstract should state briefly the purpose of the
research, the principal results and major conclusions. An abstract is often presented separately from
the article, so it must be able to stand alone. For this reason, References should be avoided, but if
essential, then cite the author(s) and year(s). Also, non-standard or uncommon abbreviations should
be avoided, but if essential they must be defined at their first mention in the abstract itself.

**Graphical abstract**

Although a graphical abstract is optional, its use is encouraged as it draws more attention to the online
article. The graphical abstract should summarize the contents of the article in a concise, pictorial form
designed to capture the attention of a wide readership. Graphical abstracts should be submitted as a
separate file in the online submission system. Image size: Please provide an image with a minimum
of 531 × 1328 pixels (h × w) or proportionally more. The image should be readable at a size of 5 ×
13 cm using a regular screen resolution of 96 dpi. Preferred file types: TIFF, EPS, PDF or MS Office
files. You can view Example Graphical Abstracts on our information site.

Authors can make use of Elsevier's Illustration Services to ensure the best presentation of their images
and in accordance with all technical requirements.

**Keywords**

Immediately after the abstract, provide a maximum of 6 keywords, using American spelling and
avoiding general and plural terms and multiple concepts (avoid, for example, 'and', 'of'). Be sparing
with abbreviations: only abbreviations firmly established in the field may be eligible. These keywords
will be used for indexing purposes.

**Acknowledgements**

Collate acknowledgements in a separate section at the end of the article before the references and do
not, therefore, include them on the title page, as a footnote to the title or otherwise. List here those
individuals who provided help during the research (e.g., providing language help, writing assistance
or proof reading the article, etc.).

**Formatting of funding sources**

List funding sources in this standard way to facilitate compliance to funder's requirements:

Funding: This work was supported by the National Institutes of Health [grant numbers xxxx, yyyy];
the Bill & Melinda Gates Foundation, Seattle, WA [grant number zzzz]; and the United States Institutes
of Peace [grant number aaaa].

It is not necessary to include detailed descriptions on the program or type of grants and awards. When
funding is from a block grant or other resources available to a university, college, or other research
institution, submit the name of the institute or organization that provided the funding.
If no funding has been provided for the research, it is recommended to include the following sentence:

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

**Nomenclature and units**

**Nomenclature.** For styling of isotope, enzyme, and biochemical nomenclature, consult the Information for Authors of the Archives of Biochemistry and Biophysics.

**Units and Abbreviations.** Units will be in general accordance with the International System (SI) as adopted by the 11th General Conference on Weights and Measures. Note that the abbreviations for a unit are never followed by a full stop, e.g., 10g/L, 5 pmol, 2 mM. Do not use full stops in abbreviations with capital letters, e.g., DNA. For case abbreviations use full stops, e.g., i.v., s.c. All other words to be abbreviated should be written in full when they appear in the text and be followed by the abbreviation in parentheses.

**Math formulae**

Please submit math equations as editable text and not as images. Present simple formulae in line with normal text where possible and use the solidus (/) instead of a horizontal line for small fractional terms, e.g., X/Y. In principle, variables are to be presented in italics. Powers of e are often more conveniently denoted by exp. Number consecutively any equations that have to be displayed separately from the text (if referred to explicitly in the text).

**Footnotes**

Footnotes should be used sparingly. Number them consecutively throughout the article. Many word processors build footnotes into the text, and this feature may be used. Should this not be the case, indicate the position of footnotes in the text and present the footnotes themselves separately at the end of the article.

**Artwork**

**Electronic artwork**

**General points**

- Make sure you use uniform lettering and sizing of your original artwork.
- Preferred fonts: Arial (or Helvetica), Times New Roman (or Times), Symbol, Courier.
- Number the illustrations according to their sequence in the text.
- Use a logical naming convention for your artwork files.
- Indicate per figure if it is a single, 1.5 or 2-column fitting image.
- For Word submissions only, you may still provide figures and their captions, and tables within a single file at the revision stage.
- Please note that individual figure files larger than 10 MB must be provided in separate source files.

A detailed guide on electronic artwork is available.

**You are urged to visit this site; some excerpts from the detailed information are given here.**

**Formats**

Regardless of the application used, when your electronic artwork is finalized, please 'save as' or convert the images to one of the following formats (note the resolution requirements for line drawings, halftones, and line/halftone combinations given below):

- EPS (or PDF): Vector drawings. Embed the font or save the text as 'graphics'.
- TIFF (or JPEG): Color or grayscale photographs (halftones): always use a minimum of 300 dpi.
- TIFF (or JPEG): Bitmapped line drawings: use a minimum of 1000 dpi.
- TIFF (or JPEG): Combinations bitmapped line/half-tone (color or grayscale): a minimum of 500 dpi is required.

**Please do not:**

- Supply files that are optimized for screen use (e.g., GIF, BMP, PICT, WPG); the resolution is too low.
- Supply files that are too low in resolution.
- Submit graphics that are disproportionately large for the content.

**Color artwork**

Please make sure that artwork files are in an acceptable format (TIFF or JPEG), EPS or PDF, or MS Office files and with the correct resolution. If, together with your accepted article, you submit usable color figures then Elsevier will ensure, at no additional charge, that these figures will appear in color online (e.g., ScienceDirect and other sites) regardless of whether or not these illustrations
are reproduced in color in the printed version. For color reproduction in print, you will receive information regarding the costs from Elsevier after receipt of your accepted article. Please indicate your preference for color: in print or online only. Further information on the preparation of electronic artwork.

Figure captions
Ensure that each illustration has a caption. A caption should comprise a brief title (not on the figure itself) and a description of the illustration. Keep text in the illustrations themselves to a minimum but explain all symbols and abbreviations used.

Tables
Please submit tables as editable text and not as images. Tables can be placed either next to the relevant text in the article, or on separate page(s) at the end. Number tables consecutively in accordance with their appearance in the text and place any table notes below the table body. Be sparing in the use of tables and ensure that the data presented in them do not duplicate results described elsewhere in the article. Please avoid using vertical rules and shading in table cells.

References
Citation in text
Please ensure that every reference cited in the text is also present in the reference list (and vice versa). Any references cited in the abstract must be given in full. Unpublished results and personal communications are not recommended in the reference list, but may be mentioned in the text. If these references are included in the reference list they should follow the standard reference style of the journal and should include a substitution of the publication date with either ‘Unpublished results’ or ‘Personal communication’. Citation of a reference as ‘in press' implies that the item has been accepted for publication.

Reference links
Increased discoverability of research and high quality peer review are ensured by online links to the sources cited. In order to allow us to create links to abstracting and indexing services, such as Scopus, CrossRef and PubMed, please ensure that data provided in the references are correct. Please note that incorrect surnames, journal/book titles, publication year and pagination may prevent link creation. When copying references, please be careful as they may already contain errors. Use of the DOI is highly encouraged.

A DOI is guaranteed never to change, so you can use it as a permanent link to any electronic article. An example of a citation using DOI for an article not yet in an issue is: VanDecar J.C., Russo R.M., James D.E., Ambeh W.B., Franke M. (2003). Aseismic continuation of the Lesser Antilles slab beneath northeastern Venezuela. Journal of Geophysical Research, https://doi.org/10.1029/2001JB000884. Please note the format of such citations should be in the same style as all other references in the paper.

Web references
As a minimum, the full URL should be given and the date when the reference was last accessed. Any further information, if known (DOI, author names, dates, reference to a source publication, etc.), should also be given. Web references can be listed separately (e.g., after the reference list) under a different heading if desired, or can be included in the reference list.

Data references
This journal encourages you to cite underlying or relevant datasets in your manuscript by citing them in your text and including a data reference in your Reference List. Data references should include the following elements: author name(s), dataset title, data repository, version (where available), year, and global persistent identifier. Add [dataset] immediately before the reference so we can properly identify it as a data reference. The [dataset] identifier will not appear in your published article.

Preprint references
Where a preprint has subsequently become available as a peer-reviewed publication, the formal publication should be used as the reference. If there are preprints that are central to your work or that cover crucial developments in the topic, but are not yet formally published, these may be referenced. Preprints should be clearly marked as such, for example by including the word preprint, or the name of the preprint server, as part of the reference. The preprint DOI should also be provided.

References in a special issue
Please ensure that the words ‘this issue’ are added to any references in the list (and any citations in the text) to other articles in the same Special Issue.
Reference management software
Most Elsevier journals have their reference template available in many of the most popular reference management software products. These include all products that support Citation Style Language styles, such as Mendeley. Using citation plug-ins from these products, authors only need to select the appropriate journal template when preparing their article, after which citations and bibliographies will be automatically formatted in the journal’s style. If no template is yet available for this journal, please follow the format of the sample references and citations as shown in this Guide. If you use reference management software, please ensure that you remove all field codes before submitting the electronic manuscript. More information on how to remove field codes from different reference management software.

Reference formatting
There are no strict requirements on reference formatting at submission. References can be in any style or format as long as the style is consistent. Where applicable, author(s) name(s), journal title/book title, chapter title/article title, year of publication, volume number/book chapter and the article number or pagination must be present. Use of DOI is highly encouraged. The reference style used by the journal will be applied to the accepted article by Elsevier at the proof stage. Note that missing data will be highlighted at proof stage for the author to correct. If you do wish to format the references yourself they should be arranged according to the following examples:

Reference style
Text: All citations in the text should refer to:
1. Single author: the author’s name (without initials, unless there is ambiguity) and the year of publication;
2. Two authors: both authors’ names and the year of publication;
3. Three or more authors: first author’s name followed by ‘et al.’ and the year of publication.
Citations may be made directly (or parenthetically). Groups of references can be listed either first alphabetically, then chronologically, or vice versa.
Examples: ‘as demonstrated (Allan, 2000a, 2000b, 1999; Allan and Jones, 1999).... Or, as demonstrated (Jones, 1999; Allan, 2000).... Kramer et al. (2010) have recently shown ...’
List: References should be arranged first alphabetically and then further sorted chronologically if necessary. More than one reference from the same author(s) in the same year must be identified by the letters ‘a’, ‘b’, ‘c’, etc., placed after the year of publication.
Examples:
Reference to a journal publication:
Reference to a journal publication with an article number:
Reference to a book:
Reference to a chapter in an edited book:
Reference to a website:
Reference to a dataset:
Reference to software:

Journal abbreviations source
Journal names should be abbreviated according to the List of Title Word Abbreviations.
**Video**

Elsevier accepts video material and animation sequences to support and enhance your scientific research. Authors who have video or animation files that they wish to submit with their article are strongly encouraged to include links to these within the body of the article. This can be done in the same way as a figure or table by referring to the video or animation content and noting it in the body text where it should be placed. All submitted files should be properly labeled so that they directly relate to the video file's content. In order to ensure that your video or animation material is directly usable, please provide the file in one of our recommended file formats with a preferred maximum size of 150 MB per file, 1 GB in total. Video and animation files supplied will be published online in the electronic version of your article in Elsevier Web products, including ScienceDirect. Please supply 'stills' with your files: you can choose any frame from the video or animation or make a separate image. These will be used instead of standard icons and will personalize the link to your video data. For more detailed instructions please visit our video instruction pages. Note: since video and animation cannot be embedded in the print version of the journal, please provide text for both the electronic and the print version for the portions of the article that refer to this content.

**Supplementary material**

Supplementary material such as applications, images and sound clips, can be published with your article to enhance it. Submitted supplementary items are published exactly as they are received (Excel or PowerPoint files will appear as such online). Please submit your material together with the article and supply a concise, descriptive caption for each supplementary file. If you wish to make changes to supplementary material during any stage of the process, please make sure to provide an updated file. Do not annotate any corrections on a previous version. Please switch off the 'Track Changes' option in Microsoft Office files as these will appear in the published version.

**Research data**

This journal encourages and enables you to share data that supports your research publication where appropriate, and enables you to interlink the data with your published articles. Research data refers to the results of observations or experimentation that validate research findings. To facilitate reproducibility and data reuse, this journal also encourages you to share your software, code, models, algorithms, protocols, methods and other useful materials related to the project.

Below are a number of ways in which you can associate data with your article or make a statement about the availability of your data when submitting your manuscript. If you are sharing data in one of these ways, you are encouraged to cite the data in your manuscript and reference list. Please refer to the "References" section for more information about data citation. For more information on depositing, sharing and using research data and other relevant research materials, visit the research data page.

**Data linking**

If you have made your research data available in a data repository, you can link your article directly to the dataset. Elsevier collaborates with a number of repositories to link articles on ScienceDirect with relevant repositories, giving readers access to underlying data that gives them a better understanding of the research described.

There are different ways to link your datasets to your article. When available, you can directly link your dataset to your article by providing the relevant information in the submission system. For more information, visit the database linking page.

For supported data repositories a repository banner will automatically appear next to your published article on ScienceDirect.

In addition, you can link to relevant data or entities through identifiers within the text of your manuscript, using the following format: Database: xxxx (e.g., TAIR: AT1G01020; CCDC: 734053; PDB: 1XFN).

**Mendeley Data**

This journal supports Mendeley Data, enabling you to deposit any research data (including raw and processed data, video, code, software, algorithms, protocols, and methods) associated with your manuscript in a free-to-use, open access repository. During the submission process, after uploading your manuscript, you will have the opportunity to upload your relevant datasets directly to Mendeley Data. The datasets will be listed and directly accessible to readers next to your published article online.
For more information, visit the Mendeley Data for journals page.

**Data in Brief**

You have the option of converting any or all parts of your supplementary or additional raw data into a data article published in Data in Brief. A data article is a new kind of article that ensures that your data are actively reviewed, curated, formatted, indexed, given a DOI and made publicly available to all upon publication (watch this video describing the benefits of publishing your data in Data in Brief). You are encouraged to submit your data article for Data in Brief as an additional item directly alongside the revised version of your manuscript. If your research article is accepted, your data article will automatically be transferred over to Data in Brief where it will be editorially reviewed, published open access and linked to your research article on ScienceDirect. Please note an open access fee is payable for publication in Data in Brief. Full details can be found on the Data in Brief website. Please use this template to write your Data in Brief data article.

**MethodsX**

You have the option of converting relevant protocols and methods into one or multiple MethodsX articles, a new kind of article that describes the details of customized research methods. Many researchers spend a significant amount of time on developing methods to fit their specific needs or setting, but often without getting credit for this part of their work. MethodsX, an open access journal, now publishes this information in order to make it searchable, peer reviewed, citable and reproducible. Authors are encouraged to submit their MethodsX article as an additional item directly alongside the revised version of their manuscript. If your research article is accepted, your methods article will automatically be transferred over to MethodsX where it will be editorially reviewed. Please note an open access fee is payable for publication in MethodsX. Full details can be found on the MethodsX website. Please use the methods template or protocol template to prepare your MethodsX article.

**Data statement**

To foster transparency, we encourage you to state the availability of your data in your submission. This may be a requirement of your funding body or institution. If your data is unavailable to access or unsuitable to post, you will have the opportunity to indicate why during the submission process, for example by stating that the research data is confidential. The statement will appear with your published article on ScienceDirect. For more information, visit the Data Statement page.

**AFTER ACCEPTANCE**

**Online proof correction**

To ensure a fast publication process of the article, we kindly ask authors to provide us with their proof corrections within two days. Corresponding authors will receive an e-mail with a link to our online proofing system, allowing annotation and correction of proofs online. The environment is similar to MS Word: in addition to editing text, you can also comment on figures.tables and answer questions from the Copy Editor. Web-based proofing provides a faster and less error-prone process by allowing you to directly type your corrections, eliminating the potential introduction of errors. If preferred, you can still choose to annotate and upload your edits on the PDF version. All instructions for proofing will be given in the e-mail we send to authors, including alternative methods to the online version and PDF. We will do everything possible to get your article published quickly and accurately. Please use this proof only for checking the typesetting, editing, completeness and correctness of the text, tables and figures. Significant changes to the article as accepted for publication will only be considered at this stage with permission from the Editor. It is important to ensure that all corrections are sent back to us in one communication. Please check carefully before replying, as inclusion of any subsequent corrections cannot be guaranteed. Proofreading is solely your responsibility.

**Offprints**

The corresponding author, at no cost, will be provided with a PDF file of the article via e-mail. For an extra charge, paper offprints can be ordered via the offprint order form which is sent once the article is accepted for publication. The PDF file is a watermarked version of the published article and includes a cover sheet with the journal cover image and a disclaimer outlining the terms and conditions of use.

**To Obtain Permissions to Reproduce or Back Issues of NeuroToxicology from Volume 1 (1979) to Volume 21 (2000):** contact Copyright Clearance Center (CCC) online http://www.copyright.com or write to 222 Rosewood Drive, Danvers, MA, 01923, or call 978-750-8400 or fax 978-646-8600.
AUTHOR INQUIRIES
Visit the Elsevier Support Center to find the answers you need. Here you will find everything from Frequently Asked Questions to ways to get in touch. You can also check the status of your submitted article or find out when your accepted article will be published.