



中国孤独症脑影像联盟

**China Autism Brain Imaging Consortium**

## 联盟发起背景：

孤独症谱系障碍是由多种不同原因引起的神经发育障碍，其核心症状包括社交沟通障碍、行为刻板及兴趣狭窄等。据推断，我国孤独症患病率约为 1%，患者可能超过 1000 万，已超过儿童肿瘤、白血病、艾滋病和糖尿病发生率总和，成为严重影响儿童健康的疾病之首。孤独症不仅给患者及其父母带来极大的痛苦，也给家庭和社会造成了巨大的精神和经济负担。

孤独症的发生与大脑发育异常密切相关。然而，由于孤独症高度的临床表型及影像学特征异质性，单中心、小样本脑影像数据往往缺乏可靠性，限制了神经影像研究在临床实践中的推广应用。2014 年，美国纽约大学儿童研究中心通过联合多家单位构建了目前国际上最大的孤独症脑影像共享数据库 The Autism Brain Imaging Data Exchange (ABIDE)，来帮助各国研究者探究孤独症潜在的神经机制，寻找适合临床诊断的神经影像标记物，取得了巨大的进展。然而 ABIDE 数据库的受试者主要为欧美地区的高加索人，人种、文化及地区的巨大差异都使得基于 ABIDE 的大样本孤独症脑影像研究在中国及亚洲地区的临床使用与推广存在巨大的局限性。近年来，国内已有多家科研及临床机构开展了孤独症脑影像研究。然而，由于数据采集困难导致的小样本研究结果往往缺乏可靠性，难以进行多中心验证及推广，严重限制了神经影像在孤独症诊疗领域的推广应用。因此，联合国内孤独症脑影像研究机构，建立中国孤独症脑影像联盟，整合孤独症多中心脑影像大数据，进行资源共享，优势互补，构建中国孤独症儿童脑发育图表，探究中国孤独症儿童发展规律，寻找潜在的脑影像标记物，推进国内孤独症研究领域多学科协同发展，迫在眉睫。

## Background of the Consortium Initiative

Autism spectrum disorder (ASD) is a neurodevelopmental condition caused by a variety of genetic and environmental factors, characterized by core symptoms such as social-communication difficulties, repetitive behaviors, and restricted interests. In China, the estimated prevalence of ASD is around 1%, suggesting that more than 10 million individuals may be affected. This number exceeds the combined incidence of pediatric cancers, leukemia, HIV/AIDS, and diabetes, making ASD one of the most pressing threats to child health in the country. Autism not only causes profound challenges and suffering for affected individuals and their families but also places a heavy emotional and financial burden on society at large.

The onset and progression of autism are closely linked to abnormal brain development. However, because ASD exhibits pronounced heterogeneity in both clinical presentation and neuroimaging features, single-center studies with small sample sizes often lack reliability and reproducibility. This limitation has hindered the translation of neuroimaging research into clinical applications.

In 2014, the Autism Brain Imaging Data Exchange (ABIDE), launched by the Child Study Center at New York University, established the world's largest open neuroimaging repository for autism by aggregating MRI and phenotypic data from multiple international sites. The ABIDE database has profoundly advanced our understanding of the neural mechanisms of ASD and the search for potential neuroimaging biomarkers suitable for clinical diagnosis. Nevertheless, because the ABIDE cohort consists predominantly of Caucasian participants from North America and Europe, cultural, ethnic, and regional differences limit the generalizability of its findings to Chinese and other Asian populations.

Over the past decade, an increasing number of Chinese clinical and research institutions have independently conducted autism neuroimaging studies. Yet, due to the inherent challenges of data collection in children, most studies remain limited by small sample sizes, which constrains statistical power, impedes multicenter validation, and restricts the clinical translation of neuroimaging findings.

Therefore, establishing a China Autism Brain Imaging Consortium (CABIC)—uniting domestic institutions engaged in autism neuroimaging research—is both necessary and timely. Through large-scale data integration and collaborative sharing, this consortium aims to pool multicenter MRI datasets, harmonize methodologies, and leverage complementary strengths. Its goals are to construct brain developmental growth charts for Chinese children with autism, to elucidate their unique neurodevelopmental trajectories, and to identify potential imaging biomarkers. By fostering multidisciplinary collaboration across neuroscience, psychiatry, pediatrics, and data science, CABIC seeks to accelerate progress in autism research and promote precision diagnosis and early intervention within China.

### **联盟名称：**

本联盟中文名称为“中国孤独症脑影像联盟”，英文名称为 China Autism Brain Imaging Consortium，缩写：CABIC。联盟网站：  
<https://php.bdnilab.com/>。

### **联盟目标：**

联盟由电子科技大学倡导发起，联合解放军总医院、中山大学、北京大学、华南师范大学、重庆医科大学附属儿童医院、吉林大学第一医院等国内多家高校、医疗机构共同成立。联盟旨在整合国内优势资源、构建中国孤独症脑影像标准大数据平台，积极推动国内孤独症脑影像研究从单中心、小样本模式向多中心、大数据开放合作模式发展。联盟的建立有利于推进国内孤独症研究领域多学科协同发展，促进孤独症脑影像技术创新、产业转化、临床推广和应用，推动孤独症诊疗模式由传统主观经验到智能影像辅助的重大转变。

### **联盟合作形式：**

- 一、 联盟成员单位共同建设中国孤独症脑影像大数据共享平台，实现数据开放共享，促进联盟单位在孤独症脑影像研究领域创新协同发展。
- 二、 数据共享与成果分配：联盟成员单位将脱敏后的数据上传给联盟委员会进行整合。联盟委员会将处理后的数据以标准组织结构形成共享数据库。联盟委员会会尊重成员单位数据处置权，一般不接触原始数据。以上述数据发表的一切成果，按照科学规范和共识，在数据来源单位共同协商的基础上，按照贡献比例，进行作者标注（同时标注中国孤独症脑影像联盟或英文 China Autism Brain Imaging Consortium）。
- 三、 若联盟内成员单位有意愿使用联盟内其他成员单位数据，本着互惠互利的原则，与数据来源单位协商研究方案、成果归属、论文署名等事宜，双方达成共识后，经数据来源单位同意，可以使用该单位共享数据进行研究。
- 四、 联盟通过学术会议、培训等方式对成员单位开展技术支持、人才培养、临床实践等方面的合作。

## **Consortium Objectives**

The China Autism Brain Imaging Consortium (CABIC) was initiated by the University of Electronic Science and Technology of China (UESTC) and jointly established with leading academic and medical institutions, including the Chinese PLA General Hospital, Sun Yat-sen University, Peking University, South China Normal University, and the Children's Hospital of Chongqing Medical University, as well as the First Hospital of Jilin University, among others.

The consortium aims to integrate national resources and establish a standardized large-scale neuroimaging database for autism in China, fostering the transition of domestic autism research from single-center, small-sample studies toward a multi-center, large-scale, open, and collaborative model.

The establishment of CABIC will promote multidisciplinary collaboration in autism research across neuroscience, medicine, psychology, and computational science. It seeks to advance innovation in neuroimaging technology, facilitate clinical translation and industrial application, and ultimately transform autism diagnosis and treatment from traditional experience-based approaches to intelligent, imaging-assisted methods.

## **Forms of Collaboration**

### **Joint Data Platform Development**

Member institutions collaboratively build a national shared platform for autism neuroimaging data, enabling open access and resource sharing to promote innovation and coordinated progress in autism brain imaging research across the consortium.

## **Data Sharing and Authorship Principles**

Member institutions contribute de-identified data to the CABIC Committee for centralized integration. The committee processes and harmonizes these data into a standardized shared database.

The committee fully respects each member's data ownership and typically does not access raw data directly.

Publications derived from the shared datasets will acknowledge both the data-contributing institutions and the consortium. Authorship and institutional credit will be determined through mutual agreement and proportional contribution, following scientific integrity and community consensus. The consortium name “China Autism Brain Imaging Consortium (CABIC)” shall be included in all relevant publications.

### Inter-Institutional Data Use

If a member institution wishes to use data contributed by another member, it must do so under the principles of mutual benefit and reciprocity. The two parties will negotiate the research plan, authorship, and intellectual contribution. Upon reaching a consensus and obtaining approval from the data-contributing institution, the requesting member may use the shared data for research purposes.

### **Academic Exchange and Capacity Building**

The consortium will organize academic conferences, workshops, and training programs to enhance technical expertise, facilitate talent development, and strengthen clinical practice across member institutions, promoting sustained collaboration and innovation in autism brain imaging research.

## 附件 1：中国孤独症脑影像联盟合作协议

## **China Autism Brain Imaging Consortium Cooperation Agreement**

甲方：中国孤独症脑影像联盟

**Party A: China Autism Brain Imaging Consortium**

乙方：

**Party B:**

甲乙双方经共同协商，本着相互信任，数据共享的原则、依据加快推进国内孤独症研究领域多学科协同发展的初衷，甲乙双方在遵守法律法规的前提下达成如下合作协议：

After joint consultation, based on the principles of mutual trust and data sharing, and the original intention of accelerating the development of autism brain imaging in China, both parties have reached the following Cooperation Agreement on the premise of abiding by laws and regulations:

### **一、甲方的权利义务**

#### **Party A's Rights and Obligations**

1、甲方成立联盟委员会负责管理审核联盟申请信息

Party A will establish a Consortium Committee to manage and review the membership application to join the Consortium

2、甲方在得到乙方的许可后，可将乙方提供的脱敏及进行后处理的数据上传至联盟内部数据共享平台

Party A could upload the anonymized and after preprocessing data provided by Party B to the internal data sharing platform after obtaining Party B's permission.

3、甲方需保证乙方数据的隐私性，并负责日程管理，网站维护，数据追踪监管，成果调查等相关工作

Party A shall ensure Party B's data privacy, and is responsible for schedule management, website maintenance, data tracking and supervision, outcome survey and other related work.

4、未经乙方许可，不得向任何单位和个人公开数据

Without Party B's permission, the data shall not be disclosed to any institution or individual.

## 二、 乙方的权利义务

### Party B's Rights and Obligations

1、 乙方需按“合作加盟信息认证及安全协议”中所填写内容向甲方提供的相关脑影像、行为等多元数据资源。该数据需隐去受试者相关隐私信息。

Party B shall provide Party A with relevant multivariate data such as brain images and behaviors in accordance with the content filled in the "Consortium Information Certification and Security Agreement". The data needs to hide the private information of the subject.

2、 乙方如需使用联盟内其他成员单位数据，需在遵守“共享数据使用协议”的前提下，本着互惠互利的原则，与提供数据单位协商研究方案、成果归属、论文署名等事宜，双方达成共识后，经数据提供单位及联盟委员会同意，可以使用该单位共享数据进行研究。

If Party B needs to use the data of other member sites of the Consortium, on the premise of complying with the "Shared Data Usage Agreement", and based on the principle of mutual benefit, Party B shall negotiate with the data sharing sites on the research program, attribution of results, thesis attribution, etc. After both parties have reached a consensus, Party B can use the shared data of the data sharing site for research with the consent of the site and the committee of the Consortium.

3、 乙方需在所发表成果作者信息中标明中国孤独症脑影像联盟或 China Autism Brain Imaging Consortium。

Party B shall indicate the China Autism Brain Imaging Consortium in the author information of the published results.

### 三、 争议解决 Dispute Resolution

本合同未尽事宜，由甲乙双方本着友好协商的原则，进一步协商解决。本合同在履行过程中发生的争议，由双方当事人协商解决，协商不成，提交乙方所在地人民法院仲裁。

Matters not covered in this Agreement shall be settled through further negotiation between Party A and Party B based on the principle of friendly negotiation. Disputes arising during the performance of this Agreement shall be settled by both parties through negotiation. If the negotiation fails, they shall be submitted to the People's Court where Party B is located for arbitration.

### 四、 其他事项 Miscellaneous

本协议一式 2 份，甲乙双方各执 1 份，具有同等法律效力。

This Agreement shall have two counterparts, with each party holding one original. All counterparts shall be given the same legal effect.

签订联盟合作协议时需签订后续“合作加盟信息认证及安全协议”，该补充协议同本协议具有同等法律效力。

When parties sign the Consortium Cooperation Agreement, it is necessary to sign the follow-up "Consortium Information Certification and Security Agreement". The supplementary agreement shall have the same legal validity as this Agreement.

甲方：中国孤独症脑影像联盟

Party A: China Autism Brain Imaging Consortium

负责人（签字）：

Principal (Signature):

日期：2023/10/12

Date: October 12, 2023

乙方：

Party B:

负责人（签字）：

Principal (Signature):

日期：

Date:

## 附件 2：共享数据使用协议

## Shared Data Usage Agreement

### 简介 Introduction

作为内部开放获取的数据资源共享平台，中国孤独症脑影像联盟（以下简称联盟）将为所有内部研究人员提供数据，用于检验现有假设，或是通过应用数据探索技术生成新假设。

As a data sharing platform of internal open access, the China Autism Brain Imaging Consortium (hereinafter the "Consortium") will provide data for all internal researchers to test existing hypotheses or generate new hypotheses by applying data exploration.

对于各数据贡献单位如何使用汇聚的共享数据集进行规范，特制订本协议。为保护和确保所有受试者的机密性和隐私性，被授权访问这些数据的成员单位应遵守共享数据使用协议（以下简称协议）的规范。如果违反了相关准则，可能会撤销成员单位先前的数据许可并拒绝进一步访问。

This agreement is specially formulated to regulate the way each data contribution institution uses the aggregated shared datasets. In order to protect and ensure the information confidentiality and privacy of all subjects, member institutions authorized to access these data shall abide by the terms and conditions of the Shared Data Usage Agreement (hereinafter the "Agreement"). If the relevant terms are contravened, the member institution's previous data consent may be revoked and further access may be denied.

### 条款 Terms and Conditions

联盟成员将共享数据平台的数据和/或图像用于研究需同意以下条款：  
Consortium members who use the data and/or images of the data sharing platform for research shall agree to the following terms and conditions:

#### 1、使用范围 Scope of Data Usage

所有成员将数据仅用于进行研究，不得用于其他目的。

All members shall use the data only to conduct research and not for other purposes.

#### 2、协议不可转让性 Non-Transferability

此协议不可转让，如果成员单位需要指定另一合作单位帮助完成研究，那么需通过 [cabic.committee@gmail.com](mailto:cabic.committee@gmail.com) 提交新的数据共享协议。在获得联盟委员会批准前，合作单位不得使用数据。

This Agreement is non-transferable. If the member institution needs to designate another partner institution to help complete the research, a new data sharing agreement must be submitted via [cabic.committee@gmail.com](mailto:cabic.committee@gmail.com). The partner institution is not allowed to use the data until approved by the Consortium Committee.

### **3、受试者隐私性 Subject Privacy**

成员单位不得以任何方式获取数据的主体受试者的个人身份及隐私信息。

Member institutions shall not obtain the personal identity and other private information of the data subject in any way.

### **4、数据免责声明 Data Disclaimer**

联盟提供的所有共享数据均为采集原始数据，不包含任何明示或暗示的陈述或保证，包括准确性或完整性。

All shared data provided by the Consortium is collected raw with no representation or warranty of any kind, express or implied, including accuracy or completeness.

### **5、风险承担 Risk Taking**

成员单位应对其研究员、老师、员工、管理人员、董事、学生和代理人未能遵守工作范围、适用法规和本协议的条款的作为和不作为承担全部责任。

Member institutions shall be fully responsible for the behavior of their researchers, teachers, employees, administrative staff, directors, students and agents who fail to comply with the scope of work, the terms of applicable laws and regulations as well as this Agreement.

### **6、成果发表通报 Result Publication Announcement**

联盟鼓励成员以任何方式及时公开披露工作成果。有新的相关工作成果时，成员单位及时通过 [cabic.committee@gmail.com](mailto:cabic.committee@gmail.com) 邮件告知联盟，成果的发布（或其他方式公开披露）时间地点内容，还需包括主要的参与者及出版物的相关信息等。

The Consortium encourages members to publicly disclose the results of their work in a timely manner by any means. When there are new relevant work results, the member institutions shall promptly inform the Consortium via [cabic.committee@gmail.com](mailto:cabic.committee@gmail.com): publication (or other means of public disclosure) time, place and content, as well as the relevant information of the main participants and publications, etc.

### **7、禁止数据再传播 Prohibition of Data Redistribution**

联盟所有成员单位拥有对所有共享数据的控制权，但不得向任何其他单位或个人传输数据（无论是否收费）。联盟成员不得以任何方式将数据出售给除单位内部的研究人员以外的任何人。

All member institutions of the Consortium have control over all shared data, but shall not transmit data to any other institution or individual (whether charged or not).

Consortium members are not allowed to sell data in any way to anyone other than researchers within the institution.

## **8、 联盟遵守工作范围、法律与协议 Scope of Work, Laws and Agreement That Consortium Members Should Abide by**

成员单位应遵守相关法律及本协议。成员单位需及时向联盟委员会报告工作范围内的任何重大变化以及涉及受试者风险的任何意外问题。同意立即向联盟委员会报告任何违反政策或本协议条款的行为。本协议是对任何接收机构的补充，但不会取代为人类受试者提供额外保护的机构政策或任何法律法规。

Member institutions shall abide by relevant laws and this Agreement. The institutions shall promptly report to the Consortium Committee any major changes in the scope of work and any unexpected issues involving the subject risk. Members shall agree to report immediately to the Consortium Committee any violations of Consortium policy or the terms of this Agreement. This agreement supplements existing regulations at the receiving institution. But it does not supersede institutional policies or any laws and regulations that provide additional protections for human subjects.

## **9、 成员发表信息的公开许可 Permission for Information Openness of Member Publication**

同意允许联盟委员会在联盟网站上总结公布各成员单位相关研究信息。

The Consortium Committee shall be allowed to summarize and publish relevant research information of each member institution on the Consortium website.

## **10、 安全性 Security**

成员单位在访问、接收和使用数据时应遵守随附的“信息安全”中的相关规定和安全标准。

When accessing and using data, member institutions shall abide by the relevant regulations and security standards in the attached "Information Security".

## **11、 适用法律 Applicable Law**

本协议受中华人民共和国法律管辖。

This Agreement is governed by the laws of the People's Republic of China.

### 附件 3：信息安全 Information Security

信息安全受适用法律约束，其目的是为使用共享数据的联盟成员提供最低安全标准，确保信息安全。联盟委员会要求所有成员必须遵守以下信息安全行为：

Information security is governed by applicable law. It sets minimum security standards for Consortium members using shared data to ensure information security. The Consortium Committee requires all members to comply with the following information security practices:

**1、不要试图越过技术或管理控制来访问您未获得明确授权的数据。**

You should not attempt to bypass technical or administrative controls to access data that you are not explicitly authorized to do.

**2、确保被指示使用该系统的任何人都可以访问并了解信息安全以及与联盟使用相关的所有现有政策和程序。**

You should ensure that anyone instructed to use the system can access and understand all existing policies and procedures related to information security and Consortium usage.

**3、在法律允许的情况下，将安全事件或任何涉嫌欺诈、浪费或滥用数据的事件通过 [cabic.committee@gmail.com](mailto:cabic.committee@gmail.com) 通知联盟委员会。**

You should notify the Consortium Committee of security incidents or any suspected fraud, waste, or misuse of data through [cabic.committee@gmail.com](mailto:cabic.committee@gmail.com), as permitted by law.

**4、保护数据，仅向授权研究人员提供访问权限，允许您的机构或法律要求的其他人访问此类数据。**

For protected data, we provide access only to authorized researchers, allowing your institution or others legally required to access such data.

**5、当您收到共享数据时，将数据下载到具有强密码保护的安全计算机或服务器。**

When you receive shared data, you should download it to a secure computer or server with strong password protection.

**6、确保数据不会暴露在互联网上或发布到可能被百度或谷歌等互联网搜索引擎发现的网站。**

You should ensure that data is not exposed to the internet or posted to websites that may be discovered by internet search engines such as Baidu or Google.

**7、如果您离开办公室，请关闭数据文件或锁定您的计算机。**

If you leave your office, please close the data files or lock your computer.

8、 避免将数据存储在笔记本电脑或其他便携式媒体上。如果在此类设备上存储数据，请加密数据。

You should avoid storing data on laptops or other portable media. If you store data on such devices, please encrypt the data.

9、 使用完数据后，成员可以保留一份数据副本。在法律允许的情况下，必须销毁或以其他方式妥善处置数据的任何其他副本。

Consortium members could keep one copy of the data after using it. Any other copies of data must be destroyed or otherwise properly disposed of, as permitted by law.

## 合作信息认证及安全协议

## Consortium Information Certification and Security Agreement

姓名:

Name:

学历:

Education:

单位 (职位\职称) :

Institution (Title):

国家:

Country:

省份城市:

City, Province:

详细地址:

Detailed Address:

电话:

Contact Number:

邮箱:

Email:

共享数据简要信息【包括孤独症 (autism) , 典型发育对照 (TDC) 受试者数目、年龄范围, 使用何种孤独症诊断方式或量表, 脑影像数据类型 (例如 3DT1、DTI、BOLD 等) 】:

Brief information of shared data [including number of Autism spectrum disorder (autism) and typical developmental control (TDC) subjects, age range, diagnostic method or checklist used for autism, and type of brain imaging data (such as 3DT1, DTI, BOLD, etc.)]:

通过签署本协议并注明日期请求加盟中国孤独症脑影像联盟并加入数据共享平台。我和我的单位成员将严格遵守共享联盟加盟合作协议及数据使用协议。

By signing this agreement and specifying the date, our institution requests to join the China Autism Brain Imaging Consortium and the data sharing platform. Our institution members and I will strictly abide by the Sharing Consortium Cooperation Agreement and the Data Usage Agreement.

中国孤独症脑影像联盟

China Autism Brain Imaging Consortium

姓名: 段旭君

Name: Xujun Duan

签名:

日期: 2023/10/12

Signature:

Date: October 12, 2023

参与单位负责人 Principal of the Participating Institution:

姓名:

Name:

职位:

Title:

签名:

日期:

Signature:

Date: