



KING KHALID UNIVERSITY  
College of Dentistry



## Research Quality Assurance Process at KKUCOD





## Introduction

Quality Assurance (QA) in research at KKUCOD ensures that all research activities meet high standards of integrity, reliability, and compliance with ethical and regulatory requirements. QA encompasses processes, policies, and procedures designed to maintain high-quality research output. Below are the key objectives and goals of QA in research:

## Objectives of QA in Research

- 1- Ensure Research Integrity
  - Promote ethical conduct and transparency in all stages of research.
  - Prevent misconduct such as plagiarism, data fabrication, and falsification.
- 2- Enhance Research Reliability
  - Ensure the consistency and reproducibility of research results.
  - Standardize methodologies and procedures to reduce variability.
- 3- Promote Compliance
  - Adhere to ethical, legal, and institutional guidelines.
  - Ensure compliance with regulations for human and animal studies, data protection, and safety.
- 4- Improve Data Quality
  - Ensure data collection, analysis, and reporting are accurate, complete, and verifiable.
  - Implement robust data management practices.
- 5- Optimize Resource Utilization
  - Minimize waste of time, funding, and materials through efficient planning and execution.
  - Ensure resources are used responsibly and effectively.
- 6- Foster Stakeholder Confidence
  - Build trust among funding agencies, regulatory bodies, and the scientific community.
  - Provide assurance that research findings are credible and reliable.
- 7- Support Continuous Improvement
  - Identify areas for improvement in research processes and methodologies.
  - Promote ongoing learning and development for researchers and staff.
- 8- Facilitate Accreditation and Recognition
  - Ensure compliance with international and institutional quality standards.
  - Support accreditation processes for research facilities and programs.





**The key aspects considered for implementing and maintaining QA in research at KKUCOD are-**

- Governance and research Policy
- Research Design and Methodology
- Collaboration in research projects
- Data Management
- Research Training
- Monitoring of research
- Performance Metrics:
- Quality Control in Laboratory Research
- Dissemination of Research Findings
- Continuous Improvement

**Governance and Research Policy**

**Research Policies:**

The research policies designed to support the KKUCOD, vision, mission and goals of advancing oral health through evidence-based research. It encompasses governance, ethical considerations, data management, publication standards, and quality assurance mechanisms, providing a comprehensive roadmap for researchers at all levels. These policies aim to empower researchers at KKUCOD while upholding the highest standards of scientific rigor and ethical responsibility. The research process is governed and monitored by the Vice Dean for Postgraduate studies and Scientific Research at KKUCOD. It has its associated committees - Scientific Research Committee (SRC) and Institutional Review Board (IRB) which ascertain the smooth research process at KKUCOD.

**[KKUCOD has a separate manual for Research Policies]**  
[\(Research Policy Manual at KKUCOD\)](#)

• **Ethical Standards:**

KKUCOD, has institutional review board (IRB) and it has its published Guidelines for Ethics in Scientific Research which provides the fundamental policies and ethical standards for conducting scientific research at KKUCOD. It emphasizes the integration of research with moral values and highlights the necessity for ethical norms in scientific inquiry. The document guides dental students, interns, and investigators to adhere to ethical, legal, and professional standards during scientific exploration. The IRB focuses on animal welfare, environmental preservation, the safety and well-being of researchers, and respect for the rights, dignity, health, safety, well-being, and privacy of research participants. Compliance with these guidelines is crucial for maintaining the integrity of research activities within the College. ([IRB Guidelines for Ethics in Scientific Research](#)).

This document addresses the ethical sanction and conduct of research involving human participants, their material, or direct or indirect identifiers, as well as animals and the





environment. It provides general guidance on expected standards and ethical approval requirements for research. The Policy should be read in conjunction with: (i) the Code of Conduct and Integrity in Research; (ii) the Regulations for Research Involving Human Participants; (iii) the Regulations Governing Research Involving Animals. The informed consent process and as well as the information that will be provided is scrutinized by IRB. Also, IRB ask and note any discloser and manage any potential conflicts of interest among researchers.

The research activities conducted at KKUCOD adhere to due ethical standards following national and international regulations. Such as - Saudi food and Drug agency, Declaration of Helsinki (DoH, Finnish: Helsingin julistus) for the medical community by the world medical association. (WMA).

**Informed Consent:** Ensure participants understand the risks and benefits before enrolling in research.

**Conflict of Interest:** Research Scholars conducting research should uphold trustworthy affiliations with study participants, funding entities, their affiliated institutions, professional societies and the wider community. This trust can be compromised by conflicts of interest that impact their independent and objective assessments. A conflict-of-interest manifests when personal inclinations or fiscal gains affect impartial decision-making pertaining to research activities. Consequently, academics in these situations alongside members from the IRB are compelled to acknowledge any existing or potential sources of discordance between vested interests versus academic integrity before the IRB.

### **Research Design and Methodology**

Research studies that have been authorized by the IRB will be monitored to check for adherence to the study as approved and/or updated study authorization. Monitoring of data, authorship, copyright and patenting, and secrecy are all key components of the ethical principles governing research. Protecting intellectual property and encouraging teamwork are two of the goals of these guidelines. Scholars care deeply about the safety of their ideas and the acknowledgement of their work. The research study protocols are developed by the principal investigator and co-investigator through a standardized process and submit it to the IRB for ethical approval. The IRB has Research proposal submission guidelines as per research type. The researchers must fill the required forms and submit tit to the IRB for the review process, following which the decision of approval / revision or rejection will be communicated to the researcher. A detailed procedure for the IRB working is mentioned in IRB manual and IRB Guidelines for Ethics in Scientific Research. ([IRB-Operations Manual](#)); ([IRB Guidelines for Ethics in Scientific Research](#)).

### **Collaboration in research projects**

KKUCOD encourages collaboration in research projects between dental researchers and other disciplines and other institutes for robust study designs. KKUCOD encourages the faculties for the **inter-college studies and Collaborative research with other institutions. But at the same time the institute** strongly recommended that the evaluation of research endeavors involving multiple schools across various universities be overseen by a unified committee, following all ethical standards. Typically, the School or Faculty Committee serves as the



primary operational unit for the Principal Investigator. Nevertheless, there might be circumstances where it becomes necessary to prioritize a submission to a co-investigator from a different School or Faculty.

### Data Management

- **Data Integrity:** Implement systems to ensure accurate and reliable data collection and analysis.
- **Data Storage:** Secure and archive data appropriately to maintain confidentiality and enable future audits. The lab books should be kept in safe place. The computer files should be backed up stored in secure location. Biological samples must be stored in safe place. Data that are subjected to privacy restriction should be stored in a safe place with access to authorized personal only. Confidentiality of the subject should always be maintained.
- **Reproducibility:** Establish clear documentation for all research activities to ensure reproducibility. The data maintenance is the responsibility of the principal investigator. The Vice Dean for Postgraduate studies and Scientific Research and research can ask to provide the data during and after the research. The PI shall provide the data to SRC with a report of the research.

### Research Training

- Research Training at KKUCOD is provided to both students and faculty, along with regular research development activities. At student level the program emphasizes teaching dental students, the principles of research and ethics and the professional code of conduct. It integrates these topics in various courses throughout the curriculum. The students are exposed to these principles at very starting level, where students are introduced to the basics of law and ethics, the importance of communication skills, modification of patient behavior, interpersonal relationships. Specific courses on the principles of ethics and professional practices have been developed and tailored for the students to embody these principles. The Student Advisory Committee plans and collaborates with the Internship Program Committee and Vice Dean for Postgraduate studies and Scientific Research to organize programs for the students and interns to focus on the research required topics and prepare them for their professional careers. Whereas the faculty and alumni attend organized events by KKUCOD as part of their faculty professional development program.
- Vice Dean for Postgraduate studies and Scientific Research-deanship of postgraduate studies and research along with the Continuing Dental Education and Media Committee (CDEM) regularly conducts various workshops and **Continuing Dental Education program**. They make plan for professional and research development for faculty within KKUCOD. The committee plans for each academic year. The plan details tasks, frequencies, performance indicators, and target benchmarks for each goal, demonstrating a structured approach to achieving these objectives in the academic year. The regular workshops on research methodologies, ethics, and QA practices are conducted. **Skill Development workshops** train staff and students in using advanced dental research tools. The faculty's professional, research and academic development is primarily accomplished through workshops, seminars, conferences, professional publications, and committee service in professional societies.



### Monitoring of research

The Vice Dean for Postgraduate studies and Scientific Research ensure the compliance of researches at KKUCOD with ethical guidelines, regulatory standards, and institutional policies and this is facilitated through IRB. This enhances the credibility and reliability of research outcomes. Following completion of research, annually the publication data is collected by Vice Dean for Postgraduate studies and Scientific Research from each faculty.

The Vice Dean for Postgraduate studies and Scientific Research, in the end of every calendar year ask the faculty to submit the total number of researches conducted at KKUCOD. This data has various parameters like- total number of researches, number of funded / non-funded researches, total number of internship researches , total number of collaboration researchers, total number of patents, citations.

The citation rate in peer-reviewed journals per faculty member is the second indicator considered. The college measures the average citation rate of faculty publications. The office of the KKUCOD Vice Dean for Postgraduate studies and Scientific Research published guidelines for citations to assess the number and rate of citations for faculty. ([Policies and Procedures for Citations](#)) The analysis is based on the total number of citations divided by the total number of faculty members in the college. ([Citations Rate in Peer Reviewed Journals per Faculty Member](#)). This indicator evaluated by KKUCOD is the rate of faculty publications in peer-reviewed journals. The average rate of published research per faculty member is three publications. ([Rate of Published Research per Faculty Member](#)). KKUCOD inspires researchers to follow the standard citation guidelines of the journals in which they submit their work for publication. The College discourages any malpractice, such as excessive self-citation, unnecessary citation of articles published in the journal to which the paper has been submitted, inaccurate citations, citation of sources that the researcher has not read, preferential citations of their friends', peers', or institution's publications, and citing work solely from one country.

At KKUCOD, we prioritize protecting scientific rights and ensuring the quality and authenticity of scientific research production, as well as student assignment submissions. To achieve this, we have developed strict policies and procedures for examining plagiarism. These policies are implemented across the board, including scientific research and courses conducted in the institute. To detect plagiarism, the program uses two primary tools: iThenticate, which is a plagiarism detection software designed for research papers and scientific write-ups, and Blackboard SafeAssign, which is a plagiarism prevention tool. With these tools and policies in place, we are committed to maintaining the integrity of our academic work and upholding ethical standards in research and education.

Vice Dean for Postgraduate studies and Scientific Research studies, ensures the compliance of these research activities through the IRB process, which involves the following of research protocols, ethical guidelines, good clinical practice. Vice Dean for Postgraduate studies and Scientific Research, ensure researchers are accountable for ethical and methodological standards. It ensure informed consent is obtained and documented appropriately. Monitor participant safety and confidentiality. Verify compliance with IRB/Ethics Committee approvals. Review data collection methods to ensure accuracy and reliability. Confirm proper storage and secure handling of data. These all procedures are performed by confirming the same with principal investigator and following the forms filled during research proposal submission for ethical approval. ([IRB-Operations Manual](#)); ([IRB Guidelines for Ethics in Scientific Research](#)); ([Excel sheets for the data collection](#)). By the monitoring process the



KKUCOD enhances the credibility of research findings, minimizes risks of ethical violations and data errors, builds trust with funding agencies and prepares the institution for external inspections and certifications.

### **Performance Metrics:**

The KKUCOD uses KPIs to measure research quality. The performance metrics are recorded annually, through the google scholar profiles. The program is in complete alignment with standard 4 of NCAAA.

KPI S4.4- The percentage of publications –This KPI is analysed by calculating the percentage of faculty publications in indexed journals.

KPI S4.5- Rate of published research per faculty- This KPI is analysed by dividing the total number of publications of the college by the total number of faculty.

KPI S4.6- Citations rate in refereed journals per faculty member- This KPI is analysed by dividing the total number of citations and the total number of faculty in the college.

To achieve these KPIs and its calculation the program follows a standard procedure. With the aim of providing the research conducted by the faculties in the institute, in an open platform, the institute encourages its faculty to maintain the GOOGLE SCHOLAR PROFILE. Google Scholar is a freely accessible web search engine that indexes the full text or metadata of scholarly literature across an array of publishing formats and disciplines. Google Scholar provides an opportunity to view the Graph citations over time and total citations in a yearly format for a researcher. The graph captures the citations by year for all publications in the researchers' Google Scholar profile.

The Google Scholar index includes peer-reviewed online academic journals and books, conference papers, theses and dissertations, preprints, abstracts, technical reports and other scholarly literature and patents. The citation metrics are updated automatically, and researchers can choose to have their list of publications updated automatically or update them yourself.

The program encourages the faculties to update their Google Scholar profile regularly and keep it open to public view. "Scholar Citations profiles" are public author profiles that are editable by the authors themselves.

The assessment of the citation numbers and rate of citation per faculty member in referred journals is done annually in December – January.

The research quality assurance helps in achieving the program goals, of producing general dentists and specialists who fulfil national requirements, establishes the college as a major centre for advanced oral health research, promote an effective and broad-based community oral health program, by maintaining and monitoring the quality of research. Encouraging the active participation of faculty in academic, research, and scientific activities. Participation of all faculty in scientific research and a high number of publications in indexed journals with high citation rate. Through quality assurance program provides support to students, faculty and staff for research starting from the proposal to publication and further its community-based applications.





3. Employers survey of KKUCOD graduates- PLOs encompass the principles of dental public health, research, and evidence-based dentistry in dental practice. -4.36

### Quality Control in Laboratory Research

The program allows members to use the research facilities at KKU Central Labs, which have sufficient equipment for scientific research. The Vice Dean for Postgraduate studies and Scientific Research at KKUCOD requests new equipment from the faculty by going through the Department Chairmen, who then send the list to the KKUCO Central Lab management. The available equipment faculty at the Central Labs is present in the attachment.

### Standard Operating Procedures (SOPs) for using the central research lab of KKU:

To utilize the central research lab KKUCOD follows a standard procedure which is monitored by the Vice Dean for Postgraduate studies and Scientific Research at KKUCOD.

#### **1. Purpose**

The purpose of this SOP is to outline the guidelines, procedures, and rules for accessing and using the central research lab to ensure efficient, safe, and standardized practices.

#### **2. Scope**

This SOP applies to all faculty, staff, researchers, and students who intend to use the central research lab facilities.

#### **3. Responsibilities**

- **Lab Manager:** Ensures compliance with SOPs, oversees lab operations, and provides necessary training.
- **Users:** Adhere to all rules and report any incidents or malfunctions.
- **Institute Administration:** Provide resources and regular maintenance of the facility.

#### **4. General Guidelines**

##### **1. Eligibility for Access:**

Only authorized personnel may access the lab. Authorization is granted after registration and approval of research proposal. The primary investigator has to get written approval letter from Vice Dean for Postgraduate studies and Scientific Research at **KKUCOD** to the head of central research lab.

##### **2. Lab Access:**

- Access hours: [Specify hours, e.g., 8:00 AM – 4:00 PM].
- Users must log their entry and exit in the lab register or digital system.

##### **3. Training:**

- All users must complete mandatory safety and equipment handling training.

#### **5. Lab Usage Policy**

##### **1. Booking and Scheduling:**





- Equipment or workspace must be booked in advance through the online portal or lab coordinator.
  - Cancellations should be notified at least [specify duration, e.g., 24 hours] in advance.
2. **Workspace Maintenance:**
    - Maintain cleanliness and organization of your workspace.
    - Do not leave ongoing experiments unattended unless explicitly allowed.
  3. **Data Management:**
    - Backup all research data regularly and ensure no unauthorized data transfer.
  4. **Prohibited Activities:**
    - Eating, drinking, and using personal electronic devices in lab areas.
    - Unauthorized experiments or use of equipment.
- 6. Safety Protocols**
1. **Personal Protective Equipment (PPE):**
    - Wear appropriate PPE (e.g., lab coat, gloves, goggles) at all times.
  2. **Emergency Response:**
    - Familiarize yourself with emergency exits, fire extinguishers, and first-aid kits.
    - Report any incidents immediately to the lab manager or supervisor.
  3. **Chemical and Equipment Handling:**
    - Follow standard safety protocols for chemical usage and equipment operation.
    - Dispose of chemical waste according to the lab's waste management policy.
- 7. Equipment Usage**
1. **Authorization:**
    - Use only the equipment you are trained and authorized to operate.
  2. **Operating Procedures:**
    - Follow the manufacturer's instructions or lab-specific guidelines for each piece of equipment.
  3. **Malfunctions and Repairs:**
    - Report any equipment malfunctions immediately.
    - Do not attempt to repair equipment unless authorized.
- 8. Record Keeping**
1. **Experiment Logs:**
    - Maintain detailed records of experiments conducted, including date, time, and equipment used.
  2. **Usage Logs:**
    - Fill in equipment usage logs after every session.
- 9. Compliance and Audits**
- Regular audits will be conducted to ensure adherence to SOPs.
  - Non-compliance may result in suspension of lab access privileges.
- 10. Revision and Updates**



- The SOP will be reviewed periodically and updated as needed. Users will be informed of any changes.

#### **11. Acknowledgment**

- All users must sign an acknowledgment form to confirm understanding and compliance with the SOPs.

Calibration, Maintenance and Proficiency Testing is conducted by the central research laboratory authorities at KKU.

#### **Dissemination of Research Findings**

**Publication Standards:** The KKUCOD encourages the faculty to Publish findings in reputable, peer-reviewed journals (WOS, SCOPUS, PUBMED) as recommended by the university in its document. The plan also focuses on encouraging patents and innovations.

#### **Continuous Improvement**

At KKUCOD, after every workshop or lecture or CDE program or any faculty development events, the Continuing Dental Education and Media Committee (CDEM) collect feedback through a survey distributed at the end of each event. It also surveys faculty for lecture and seminar topics through a needs assessment. Later, based on these survey results the action plan is developed for future need of related program topics. At KKUCOD the faculty are encouraged for the adoption of new technologies and methodologies to enhance research quality. The BDS program has several awards to recognize excellence, innovation, and commitment to Academic achievement, Research innovation, and Community Service for faculty, students and staff.