

ANALYSIS OF RESIDUAL CHLORINE CONTENT IN SWIMMING POOL  
WATER ON EYE IRRITATION COMPLAINTS  
(Case Study on Visitors Swimming Pool X Surabaya in 2024)

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### ABSTRACT

Chlorination was used to chemically sterilized the swimming pool water and produced residual chlorine. Chlorine residual in swimming pool water should complied with the quality standards that have been determined, if it didn't comply, it can caused the swimming club members complain of eye irritation. The aim of the study was to analyze the effect of residual chlorine content of swimming pool water on eye irritation complaints among swimming club members.

The type of research was observational analytic with a cross sectional approach. The subjects of this study were visitors in swimming pool X Surabaya with purposive sampling. The data collection techniques were used questionnaires, observation, and laboratory results. Data analysis was Spearman Correlation test.

The results showed that the remaining chlorine (<1 mg/l), water pH (>7) and (<7), and alkalinity (<80 mg/l) didn't met the quality standards in Permenkes No. 2 Year 2023. Swimming club members who experienced eye irritation complaints were 54.5% of people and those who didn't experience complaints were 45.5% of people. Based on the statistical test results, there was water pH is a protective factor for residual chlorine in swimming pool water with a value of (PR < 1), alkalinitas is a protective factor for residual chlorine in swimming pool water with a value of (PR < 1), and no effect of residual chlorine on eye irritation complaints with a value of (pv = 0,602).

Swimming Pool management was to install information boards on guidelines regarding cleanliness and ethics used the swimming pool. Added the soda ash to stabilize pH. Future researchers could examined other factors that affect eye irritation complaints and residual chlorine content.

**Keywords** : *Residual Chlorine Content, Eye Irritation Complaints*

ANALISIS KANDUNGAN SISA KLOOR PADA AIR KOLAM RENANG  
TERHADAP KELUHAN IRITASI MATA  
(Studi Pada Pengunjung Kolam Renang X Surabaya Tahun 2024)

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**ABSTRAK**

Perawatan air kolam renang dengan menggunakan desinfeksi kimia dilakukan melalui proses klorinasi yang menghasilkan sisa klor. Kandungan sisa klor dalam air kolam renang harus sesuai dengan standar baku mutu yang telah ditetapkan, karena ketidaksesuaian dapat menyebabkan keluhan iritasi mata pada anggota klub renang. Penelitian ini bertujuan untuk menganalisis pengaruh sisa klor dalam air kolam renang terhadap keluhan iritasi mata pada anggota klub renang.

Jenis penelitian yang digunakan adalah observasional analitik dengan pendekatan cross sectional. Subjek penelitian adalah pengunjung Kolam Renang X di Surabaya, yang dipilih melalui metode purposive sampling. Data dikumpulkan melalui kuesioner, observasi, dan hasil laboratorium. Analisis data dilakukan menggunakan uji Korelasi Spearman.

Hasil penelitian menunjukkan bahwa kandungan sisa klor (<1 mg/l), pH air (>7) dan (<7), serta alkalinitas (<80 mg/l) tidak memenuhi standar baku mutu berdasarkan Permenkes No 2 Tahun 2023. Sebanyak 54,5% anggota klub renang mengalami keluhan iritasi mata, sementara 45,5% lainnya tidak mengalami keluhan. Berdasarkan uji statistik, pH air berperan sebagai faktor protektif terhadap sisa klor dengan nilai (PR < 1), begitu pula dengan alkalinitas, yang juga merupakan faktor protektif sisa klor dengan nilai (PR < 1). Tidak ditemukan pengaruh signifikan antara sisa klor dengan keluhan iritasi mata (pv = 0,602).

Disarankan agar pengelola kolam renang memasang papan informasi tentang kebersihan dan etika penggunaan kolam renang. Penambahan soda ash untuk menstabilkan pH juga direkomendasikan. Penelitian selanjutnya disarankan untuk mengeksplorasi faktor lain yang dapat memengaruhi keluhan iritasi mata dan kandungan sisa klor..

**Kata Kunci** : Kandungan Sisa klor, Keluhan Iritasi Mata